



EDWARD M. BIRN
Director (Direktot)
RENA K. BORJA
Deputy Director (Sigundo Direktot)

**DEPARTMENT OF
ADMINISTRATION**
DIPATTAMENTON ATMENESTRASION
GENERAL SERVICES AGENCY
(Ahension Setbision Hinirat)
Telephone (Telifon): (671) 475-1705/1706



LOURDES A. LEON GUERRERO
Governor (Maga'håga)
JOSHUA F. TENORIO
Lt. Governor (Sigundo Maga'låhi)

October 31, 2025

Invitation for Bid
GSA-081-25

AMENDMENT #3

Preventive Maintenance for HVAC's

- 1) Amend page 2 and 3 of 60.

From:

This bid shall be submitted in duplicate and sealed to the issuing office above no later than (Time) **10:00a.m.**, Date: **11/07/2025** and shall be publicly opened. Bid submitted after the time and date specified above shall be rejected. See attached General Terms and Conditions, and Sealed Bid Solicitation for details.

To now read:

This bid shall be submitted in duplicate and sealed to the issuing office above no later than (Time) **10:00a.m.**, Date: **11/19/2025** and shall be publicly opened. Bid submitted after the time and date specified above shall be rejected. See attached General Terms and Conditions, and Sealed Bid Solicitation for details.

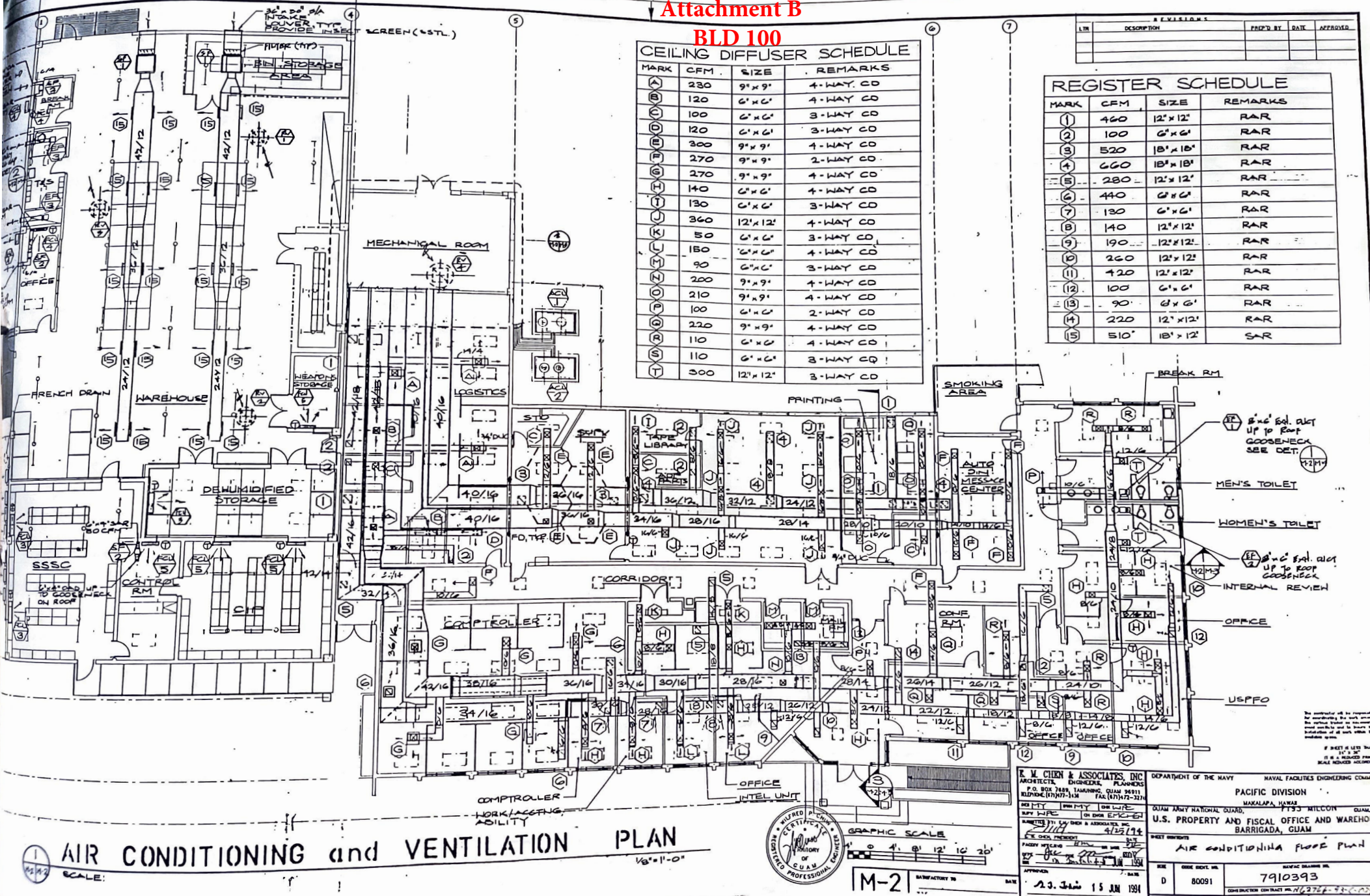
- 2) Amend to insert "**Attachment B – G**".

Andriana Quitugua
Acting Chief Procurement Officer

Please Print
ACKNOWLEDGMENT COPY
Received By: _____
Date: _____
Company/Name: _____
Email To: gsaprocurement@gsadoa.guam.gov

BLD 100

MARK	CFM	SIZE	REMARKS
①	460	12" x 12"	RAR
②	100	6" x 6"	RAR
③	520	18" x 18"	RAR
④	660	18" x 18"	RAR
⑤	280	12" x 12"	RAR
⑥	440	6" x 6"	RAR
⑦	130	6" x 6"	RAR
⑧	140	12" x 12"	RAR
⑨	190	12" x 12"	RAR
⑩	260	12" x 12"	RAR
⑪	420	12" x 12"	RAR
⑫	100	6" x 6"	RAR
⑬	90	6" x 6"	RAR
⑭	220	12" x 12"	RAR
⑮	510	18" x 12"	SAR



AIR CONDITIONING and VENTILATION PLAN

SCALE:

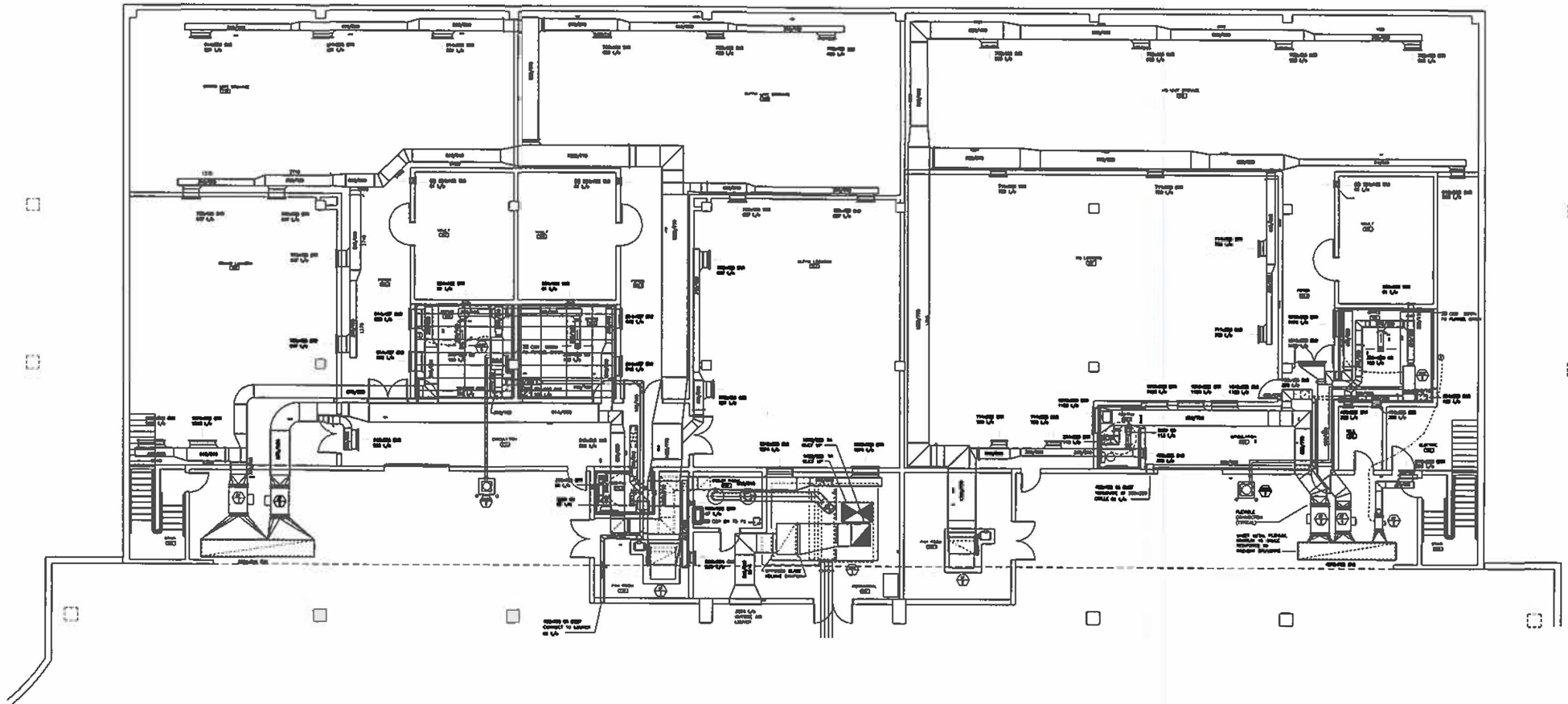
M-2

BAITING ACTIVITY

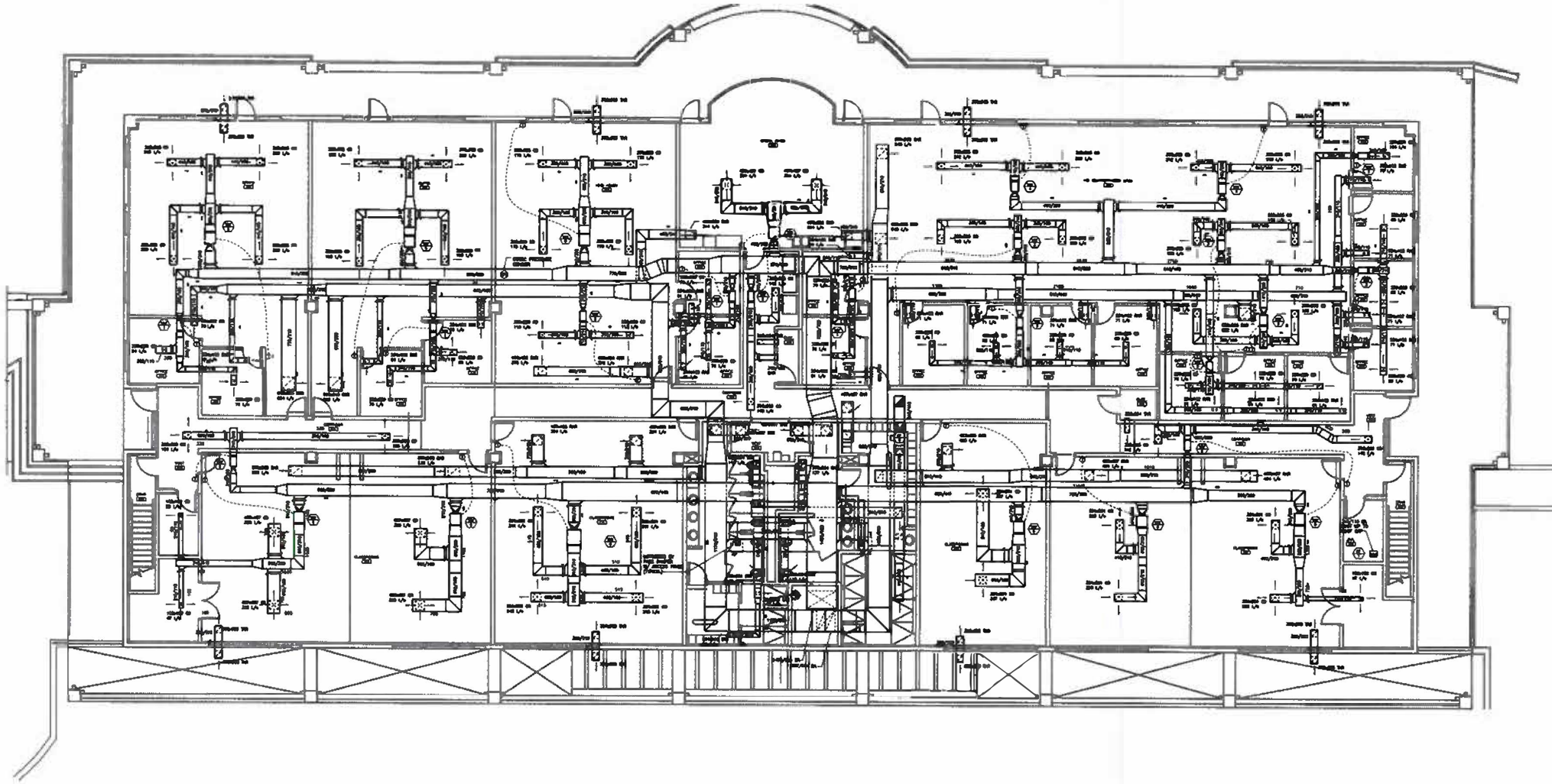
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DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND	
PACIFIC DIVISION			
MAHALAUA, MARSH			
GUAM ARMY NATIONAL GUARD,	1150 MILCOM	GUAM	
U.S. PROPERTY AND FISCAL OFFICE AND WAREHOUSE			
BARRIGADA, GUAM			
WEEK ENDMENTS			
AIR CONDITIONING FLOOR PLAN			
REF.	ORIG. DOC. NO.	NAVAL FACILITIES ENGINEERING DIV.	
D	80091	7910393	
FORM 10-68 (REV. 1-68)		U.S. GOVERNMENT PRINTING OFFICE: 1967 O - 348-100	

Attachment C
BLD 200



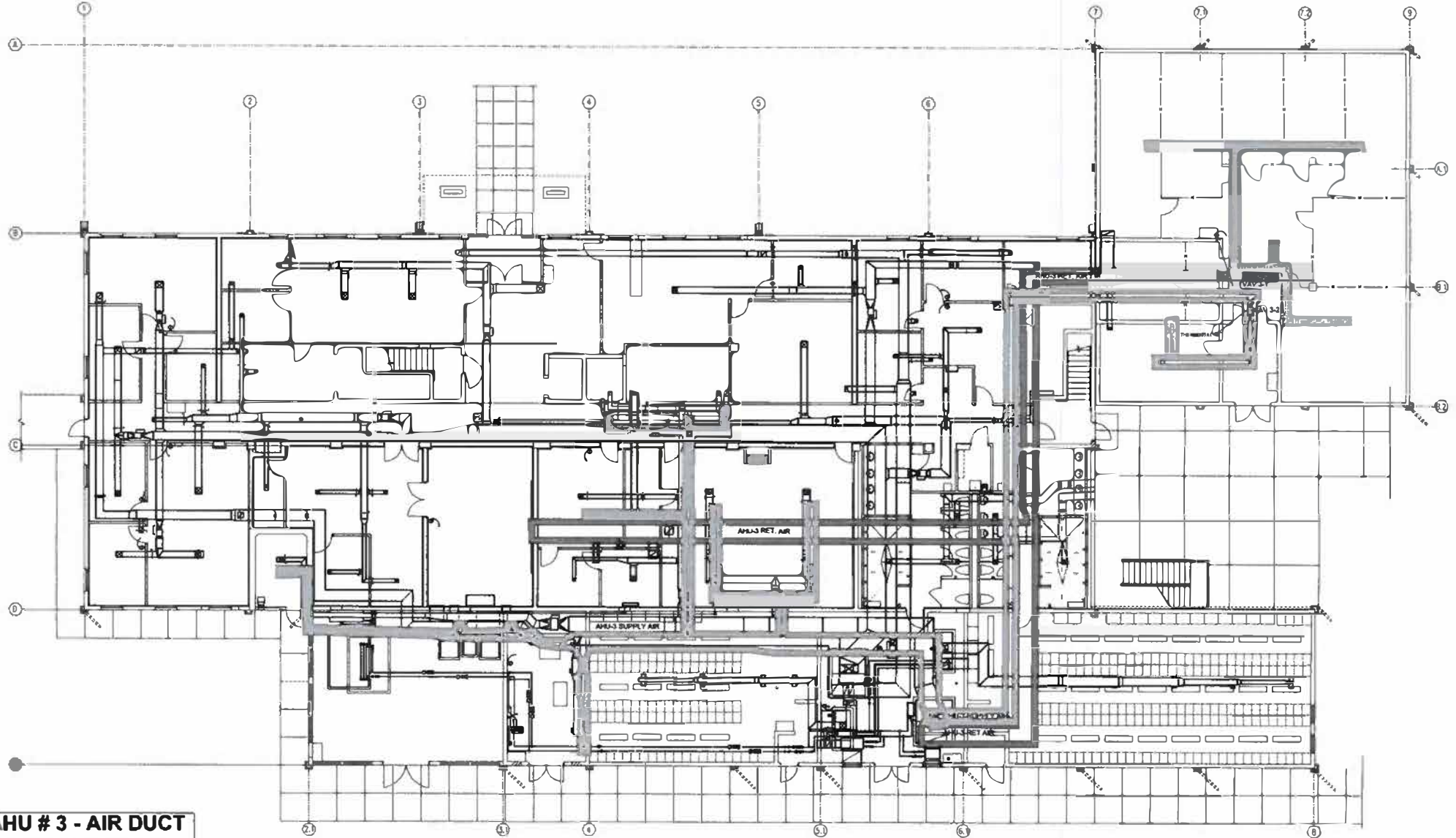
Attachment C
BLD 200



bd1

Attachment D
BLD 300

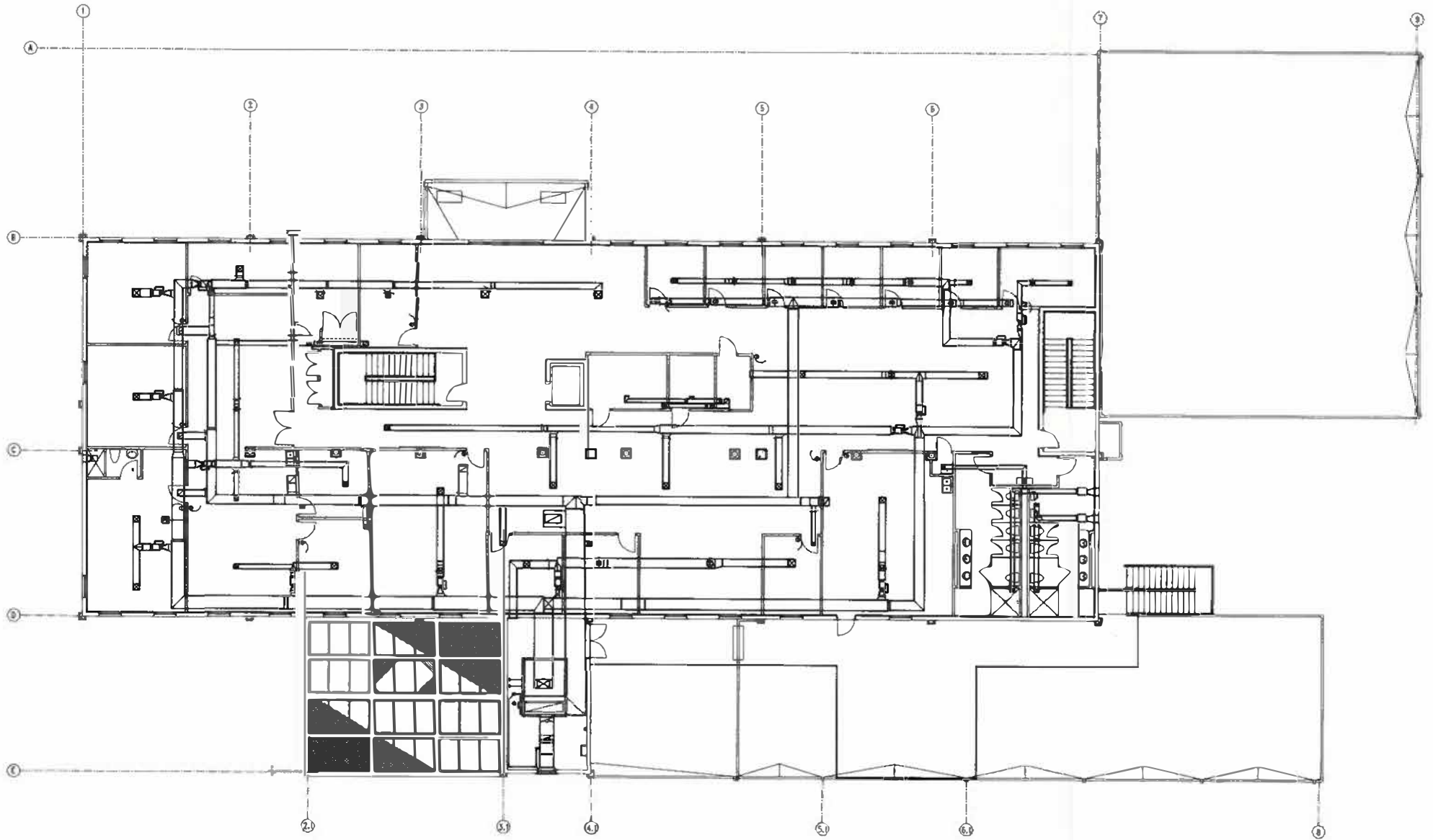
B. 300 JFHQs
1st Flr.



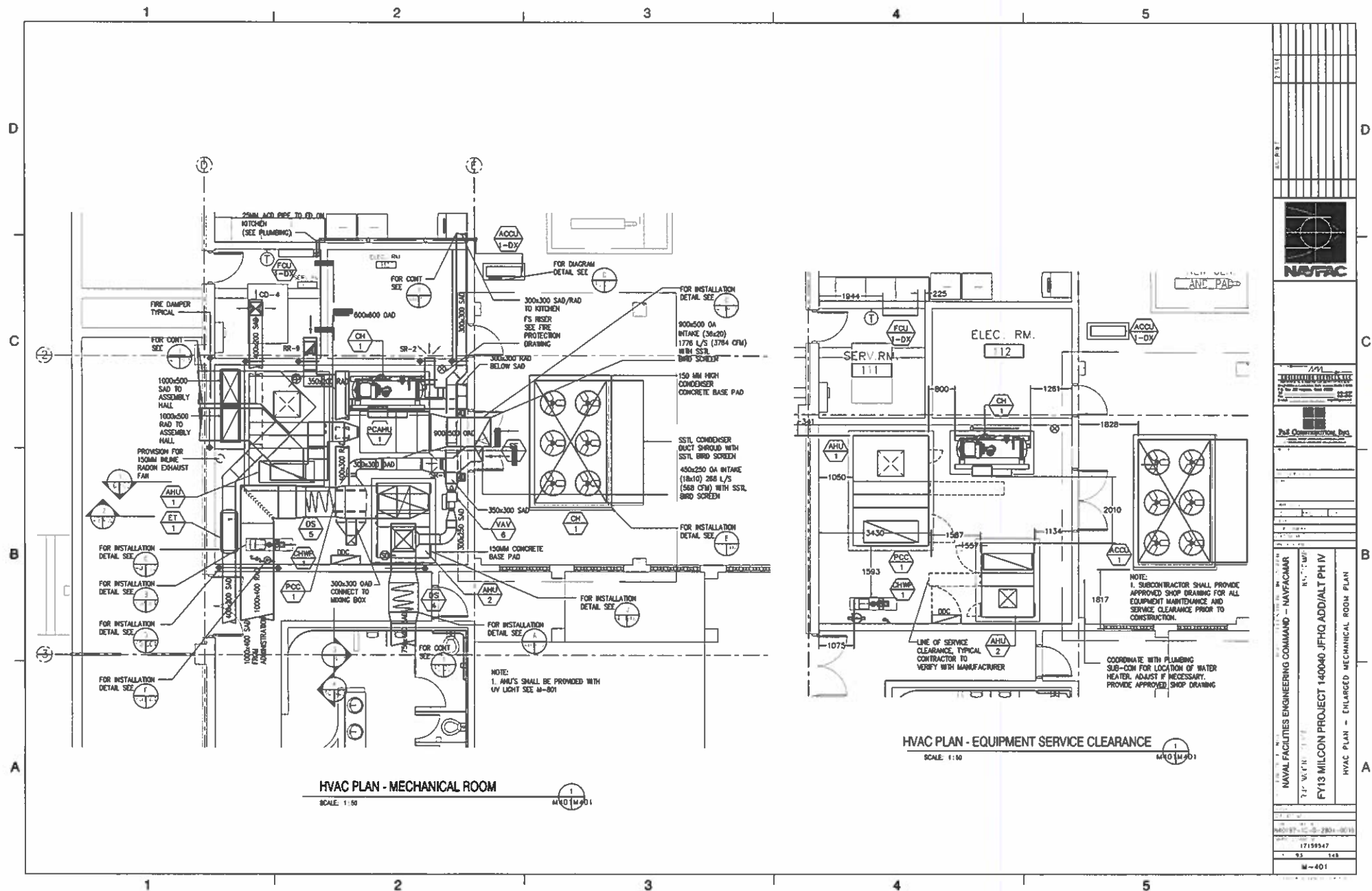
AHU # 3 - AIR DUCT
CONFIGURATION

SUPPLY AIR RETURN AIR

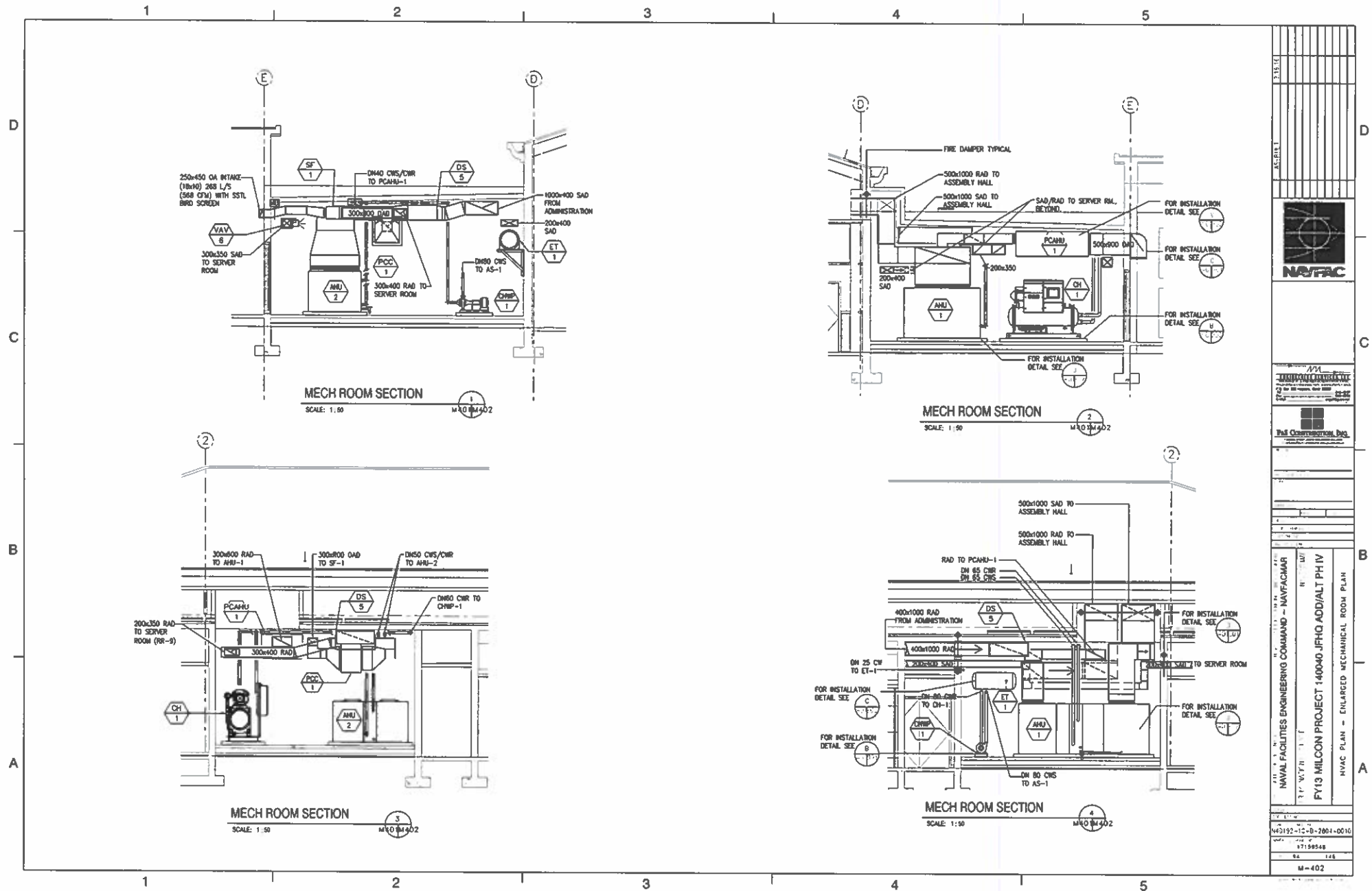
Attachment D
BLD 300



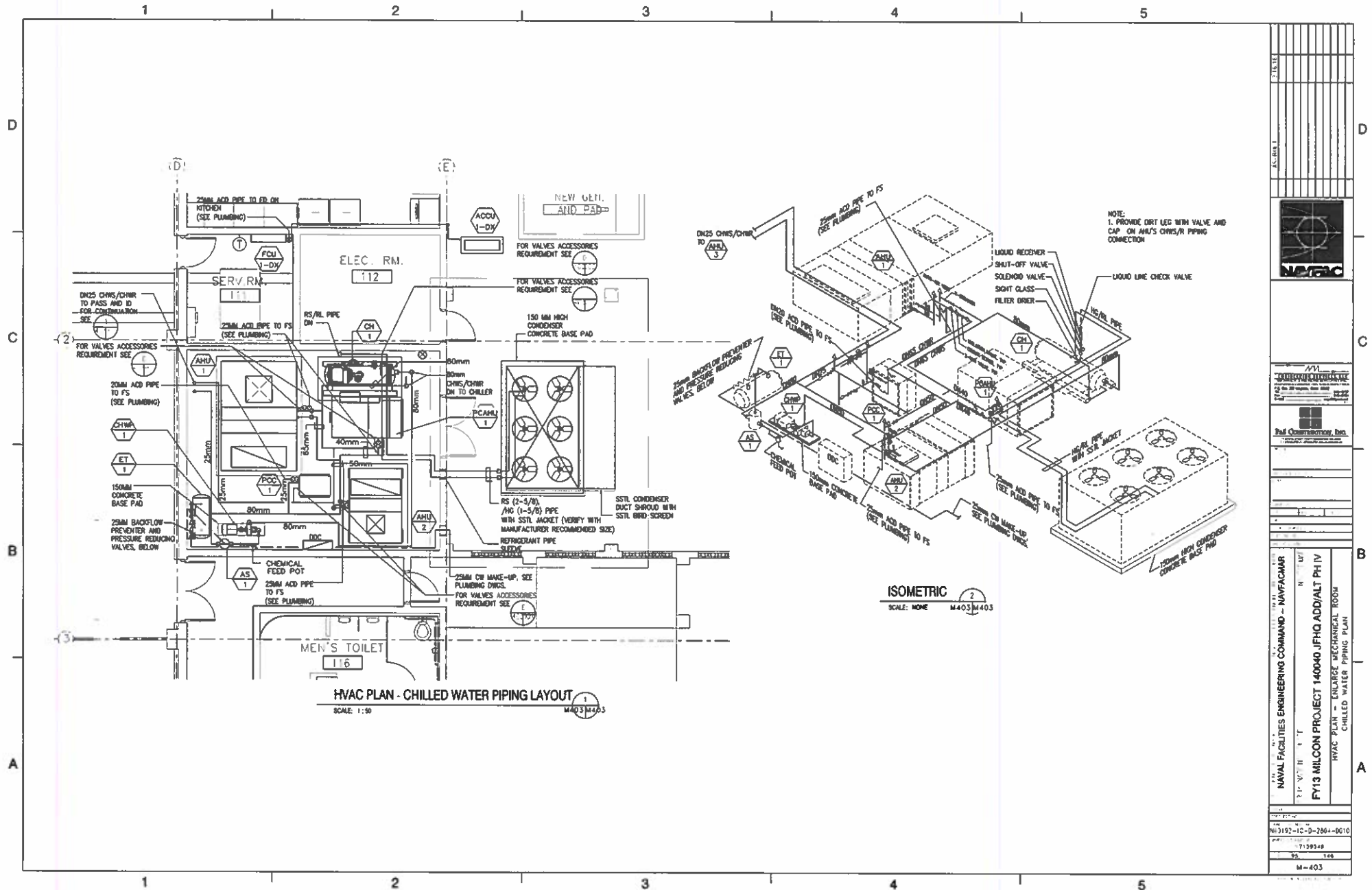
Attachment E
BLD 350



Attachment E BLD 350



Attachment E BLD 350



350

EQUIPMENT SCHEDULE

WATER CHILLER WITH REMOTE AIR COOLED CONDENSER: (COMBINATION)

MARK NO.	QTY	CAPACITY KW (TONS)	CHW FLOW LPM (GPM)	CHW TEMP °C (°F)	CONDENSER TEMP °C (°F)	COOLING WATER TEMP °C (°F)	MAXIMUM PRESSURE DROP M (FT)	COOLING FACTOR	RLA	COMPRESSOR ELEC. CHARACTERISTICS (V-P-HZ)	CONDENSER FANS (FLA)	MAX. OPER. HEIGHT KG (LBS)	BASIS OF DESIGN SELECTION	EFFICIENCY PERFORMANCE DATA ²
CH-1	1	193.8 (60)	540 (144)	12.7 (55)	7.2 (45)	3 (10)	0.00010	110	460-3-60	3.2 x 6	32.2 (90)	CHILLER = 2300 (5270) ACCU = 2000 (4400)	FRICTIONLESS CHILLER MODEL "MULTI-STAGE H20807N-134A" SPLIT MAGLEY FLOODED AIRCOOLED OR EQUAL	LOAD 100% AT 60 TON; KW/TON IS 0.932 LOAD 50% AT 30 TON; KW/TON IS 0.448 LOAD 75% AT 45 TON; KW/TON IS 0.700

NOTE: 1. PROVIDE SAFETY MEASURE OR DEVICE TO PROTECT THE CONTROLS DURING ELECTRICAL POWER SUPPLY FLUCTUATION
2. AS PER AHRU 550/560 (PLV VALUE OF 0.523)

CHILLED WATER PUMP

MARK NO.	QUANTITY	TYPE	AREA SERVED	CAPACITY LPM (GPM)	FT. OF WC	HP	RPM	ELEC. CHARACTERISTICS (V-P-HZ)	PUMP EFFICIENCY	BHP	REMARKS
CWP-1	1	CND-SUCKER, BASE MOUNTED	CHILLED WATER SYSTEM	540 (144)	60	5	3500	480-3-60	64.3%	3.56	WITH VFD MODEL BELL AND GOSSET AC SERIES 1510 OR APPROVED EQUAL

AIR HANDLING UNITS (CHILLED WATER SYSTEM)

MARK NO.	QUANTITY	AREA SERVED	COOLING CAPACITY KW (BTUH)	SA LS (CFM)	OA LS (CFM)	EXTERNAL S.P. (IN.W.G.)	ENTERING AIR TEMP. °C (°F)	LEAVING AIR TEMP. °C (°F)	ROWS	EWI. °C (°F)	LWT. °C (°F)	CHW FLOW LPM (GPM)	PD M (FT)	ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN / EQUIPMENT SELECTION		REMARKS			
AHU-1	1	ASSEMBLY HALL AREA	143.19 (488,700)	91.52 (312,300)	6.278 (13,300)	PRE-COOLED	44.8 (11.8)	23.9 (75.0)	18.5 (65.2)	12.5 (54.4)	6	7.2 (45)	12.6 (55)	370 (98)	1.2 (4)	10	460	3 60	9.97	91.70%	"TRANE" MODULAR AHU HORIZONTAL CONFIGURATION OR APPROVED EQUAL W/ VFD	STAINLESS STEEL DRAIN PAN; PAD MOUNTED
AHU-2	1	ADMIN	35.99 (122,800)	30.94 (105,600)	2.690 (5,700)	PRE-COOLED	44.8 (11.8)	23.9 (75.0)	17.1 (62.8)	14.7 (58.4)	6	45 (7.2)	56 (12.8)	95 (25)	1.2 (4)	7.5	460	3 60	6.0	91.00%	"TRANE" MODULAR AHU VERTICAL CONFIGURATION OR APPROVED EQUAL W/ VFD	STAINLESS STEEL DRAIN PAN; PAD MOUNTED
AHU-3	1	PASS AND LO.	10.78 (36,900)	7.79 (26,600)	820 (1,314)	94 (200)	13.50 (6.50)	24.6 (76.6)	18.2 (64.8)	13.1 (55.7)	6	45 (7.2)	56 (12.8)	28 (7.36)	1.2 (4)	0.50	460	3 60	0.50	91.00%	"TRANE" BOHNSA MODEL H.E. HYBRID SYSTEM AHU HORIZONTAL, OR APPROVED EQUAL, CONSTANT VOLUME	STAINLESS STEEL DRAIN PAN; CEILING MOUNTED

OUTSIDE AIR PRE-COOLING AHU

MARK NO.	QUANTITY	AREA SERVED	COOLING CAPACITY kW (BTUH)		SA LS (CFM)	OA LS (CFM)	EXTERNAL S.P. Pa. (IN.W.G.)	ENTERING AIR TEMP. °C (°F)		ENTERING HUMIDITY RATIO G/KG (GR/LB)	LEAVING AIR TEMP. °C (°F)		LEAVING HUMIDITY RATIO G/KG (GR/LB)	ROWS	EWI. °C (°F)	LWT. °C (°F)	CHW FLOW LPM (GPM)	MAX. FLUID PD (FT OF H2O)	ELECTRICAL CHARACTERISTICS				FAN BHP	BASIS OF DESIGN / EQUIPMENT SELECTION
			TOTAL	SENSIBLE				DB	WB		DB	WB							FAN (HP)	VOLTS	PHASE	HERTZ		
PCAHU 1	1	ASSEMBLY HALL	28.38 (96,900)	13.33 (46,200)	1372 (2900)	1372 (2900)	75 (0.3)	32.2 (90.0)	26.9 (80.4)	20.6 (144.2)	24.2 (75.8)	22.8 (73.0)	17.1 (119.9)	4	7.2 (45)	12.8 (55)	73 (19.4)	3.39	3	460	3	60	2.887	"TRANE" MODULAR AHU OR APPROVED EQUAL; CEILING MOUNTED; WITH VFD

OUTSIDE AIR PRE-COOLING COIL

MARK NO.	QUANTITY	AREA SERVED	COOLING CAPACITY KW (BTUH)		OA LS (CFM)	ENTERING AIR TEMP. °C (°F)		ENTERING HUMIDITY RATIO G/KG (GR/LB)		LEAVING AIR TEMP. °C (°F)		LEAVING HUMIDITY RATIO G/KG (GR/LB)		ROWS	EWI. °C (°F)	LWT. °C (°F)	CHW FLOW LPM (GPM)	MAX. FLUID PD (FT OF H2O)	REMARKS
			TOTAL	SENSIBLE		DB	WB	DB	WB	DB	WB								
POC 1	1	ADMIN	2.97 (10,100)	1.40 (4,800)	145 (300)	31.8 (89.3)	26.8 (80.3)	20.6 (144.2)	24.2 (75.5)	23.7 (72.9)	17.1 (119.9)	3	7.2 (45)	12.8 (55)	7.6 (2.0)	0.03	"TRANE" OR APPROVED EQUAL; CEILING MOUNTED		

AIR-COOLED CONDENSING AND FAN COIL UNITS: SERVER ROOM (DX-SPLIT, DUCTLESS UNIT), COMBINATION.

MARK NO.	QUANTITY	AREA SERVED	COOLING CAPACITY		SA (CFM)	OA (CFM)	EXT. S.P. (IN)	ENTERING AIR TEMP. °C (°F)		LEAVING AIR TEMP. °C (°F)		ELECTRICAL CHARACTERISTICS			VOLTS	PHASE	HERTZ	REF. TUBE SIZE (OD)			WEIGHT (LBS)	REMARKS
			KW (BTUH)	SENSIBLE				DB	WB	DB	WB	COMP. RLA	FAN MOTOR, FLA					RS	RL	ACD		
													COND	EVAP								
ACCU-1	1	SERVER ROOM	6.47 (22,100)	4.84 (15,200)	630 (1,300)	50	0.25	31.8 (75.2)	26.8 (80.6)	25.0 (56.9)	23.3 (56.9)	9.7	0.62	0.39	208-230	1	60	5/8"	3/8"	1"	18 71	DARKEN DUCTLESS SPLIT TYPE INVERTER MINIMUM OF 13,000 SEER OR APPROVED EQUAL

SUPPLY FAN

MARK NO.	QUANTITY	LOCATION/AREA SERVED	TYPE	CAPACITY L/S (CFM)	ESP IN.W.G. (Pa)	SONES	RPM	MOTOR HP VOLTAGE PHASE HERTZ	BASIS OF DESIGN/ EQUIPMENT SELECTION	REMARKS
SF-1	1	AHU-2	INLINE CENTRIFUGAL SUPPLY FAN	145 (300)	125 (0.5)	8.6	1624	0.17 115 1 60	"GREENHECK" 50-25-VC OR EQUIVALENT	WITH VFD AND AIR FILTER

EXHAUST FANS

MARK NO.	QTY	LOCATION/AREA SERVED	TYPE	CAPACITY L/S (CFM)	ESP IN.W.G. (Pa)	SONES	RPM	MOTOR WATTS VOLTAGE PHASE HERTZ	BASIS OF DESIGN/ EQUIPMENT SELECTION	REMARKS
EF-1	2	MEN'S & WOMEN'S TOILETS	CEILING-W/TO WITH INTEGRAL GRILLE	248 (525)	75 (0.3)	3.5	909	350 115 1 60	"GREENHECK" SP-A700 OR EQUIVALENT	WALL MOUNTED SWITCH WITH INTEGRAL DISCONNECT, WITH SPEED CONTROLLER AND WALL MOUNTED MOTION DETECTOR
EF-2	1	KITCHEN	CEILING-W/TO WITH INTEGRAL GRILLE	142 (300)	75 (0.3)	1.5	1143	150 115 1 60	"GREENHECK" SP-A300 OR EQUIVALENT	WALL MOUNTED SWITCH WITH INTEGRAL DISCONNECT, WITH SPEED CONTROLLER
EF-3	2	JAN AND FAMILY ROOM	CEILING-W/TO WITH INTEGRAL GRILLE	47 (100)	75 (0.3)	2.5	1400	180 115 1 60	"GREENHECK" SP-A190 OR EQUIVALENT	WALL MOUNTED SWITCH WITH INTEGRAL DISCONNECT, WITH SPEED CONTROLLER AND WALL MOUNTED MOTION DETECTOR

NAVFAC

NAVAL FACILITIES ENGINEERING COMMAND - NAVFACNAVAIR

PROJECT 140040 JFHQ ADD/ALT PH IV

MECHANICAL EQUIPMENT SCHEDULE

M-201

Attachment E BLD 350

VAV UNITS									
MARK NO.	AREA SERVED	QUANTITY ^a	CONTROL TYPE	CAPACITY L/S (CFM)		BULET SIZE mm. (in)	THERMOSTAT CONTROL	CONTROL VOLTAGE (V)	LINE VOLTAGE (VOLT)
				MINIMUM	MAXIMUM				
VAV 1	ASSEMBLY HALL	4	DDC - COOLING ONLY	471 (998)	1569 (3,325)	400 (16)	WALL-MOUNTED	24V	277
VAV 2	FAMILY ASSISTANCE CENTER	1	DDC - COOLING ONLY	100 (210)	330 (700)	200 (8)	WALL-MOUNTED	24V	277
VAV 3	NURSING AREA	1	DDC - COOLING ONLY	50 (100)	151 (320)	150 (6)	WALL-MOUNTED	24V	277
VAV 4	COUNSELING OFFICE	1	DDC - COOLING ONLY	30 (60)	94 (200)	100 (4)	WALL-MOUNTED	24V	277
VAV 5	HALLWAY, LOBBY, CIRCULATION	1	DDC - COOLING ONLY	410 (870)	1368 (2900)	350 (14)	WALL-MOUNTED	24V	277
VAV 6	KITCHEN, ELECTRICAL ROOM, MECHANICAL ROOM	1	DDC - COOLING ONLY	142 (300)	472 (1000)	250 (10)	WALL-MOUNTED	24V	277

EXPANSION TANK						
MARK NO.	LOCATION/AREA SERVED	TYPE	CAPACITY L. (G)	ACCEPTANCE VOLUME L. (G)	SIZE	REMARKS
ET 1	CHILLED WATER SYSTEM	HORIZONTAL COMPRESSION TANK WITH GAUGE GLASS	79 (24)	42 (11.3)	413mm ϕ x 1073mm L (16" x 42")	"B & C" COMPRESSION TANK, COMPLETE WITH AIR/OIL FITTINGS, ASME STAMPED

AIR SEPARATOR				
MARK NO.	TYPE	SIZE mm. (in)	WEIGHT kg. (lb)	REMARKS
AS 1	IN-LINE TYPE WITH BYPASS VALVE TO MAXIMIZE AIR SEPARATION	80 (3)	80 (3)	"B & C" MODEL SAS-3 OR EQUIVALENT

WALL EXHAUST FAN									
MARK NO.	LOCATION/AREA SERVED	TYPE	CAPACITY L/S (CFM)	ESP. P. (IN. W.C.)	SONES	RPM	MOTOR		REMARKS
							AMPS	VOLTAGE PHASE HERTZ	
WEF 1	AV ROOM	BROU THE WALL MOUNTED EXHAUST FAN	117 (250)	62 (0.25)	7.0	2050	1.5	115 1	60

DUCT SILENCER (SOUND ATTENUATORS)														
MARK NO.	LOCATION/AREA SERVED	QUANTITY ^a	TYPE	CAPACITY L/S (CFM)	INSERTION LOSS (dB)									
					83 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	FACE VELOCITY M/S (FPM)	FACE AREA (m ²)
DS 1	ASSEMBLY MAIN RETURN AIR DUCT	1	RECTANGULAR	4,500 (9,536)	2	3	7	15	21	18	11	10	10.2 (2000)	900 x 900 x 600
DS 2	ASSEMBLY VAV BOXES	4	RECTANGULAR	1,569 (3,325)	2	5	10	14	15	11	10	9	3.1 (1000)	900 x 900 x 450
DS 3	NURSING AREA, FAMILY ASSISTANCE, COUNSELING OFFICE	4	RECTANGULAR	151 (320)	17	21	25	33	34	39	54	56	3.8 (750)	575 x 400 x 400
DS 4	HALLWAY/RECELION AIR FROM AHU-2	1	RECTANGULAR	2708 (5700)	3	4	8	13	15	11	10	9	10.2 (2000)	900 x 900 x 450

NOTE:
a. VERIFY ACTUAL QUANTITY ON PLAN
b. SEE WRITTEN SPECIFICATIONS.

RETURN REGISTER AND GRILLE SCHEDULE ^b									
MARK	L/S (CFM)	NECK SIZE	NEQ. S.P.	APPLICATION	DEFLECTION	LOCATION	REMARKS	QUANTITY ^a	
RR-1	2430 (5150)	1120x850 (44x34)	0.051	RETURN	FIXED	ASSEMBLY HALL	MAX NC 25	2	
RR-2	235 (500)	350x350 (14x14)	0.051	RETURN	FIXED	CATERING KITCHEN	MAX NC 25	1	
RR-3	485 (1050)	600x600 (24x24)	0.051	RETURN	FIXED	CORRIDOR	MAX NC 25	1	
RR-4	85 (180)	250x250 (10x10)	0.051	RETURN	FIXED	COUNSELING OFFICE	MAX NC 25	1	
RR-5	306 (650)	400x400 (16x16)	0.051	RETURN	FIXED	FAMILY ASSISTANCE CENTER	MAX NC 25	1	
RR-6	157 (290)	300x300 (12x12)	0.051	RETURN	FIXED	NURSING	MAX NC 25	1	
RR-7	425 (900)	450x450 (18x18)	0.051	RETURN	FIXED	PASS/AD CENTER	MAX NC 25	1	
RR-8	377 (800)	450x450 (18x18)	0.051	RETURN	FIXED	LOBBY/WAITING	MAX NC 25	1	
RR-9	280 (550)	350x350 (14x14)	0.051	RETURN	FIXED	SERVING	MAX NC 25	1	

SUPPLY DIFFUSER / REGISTER SCHEDULE ^b								
MARK	L/S (CFM)	NECK SIZE mm (in)	TOTAL PRESSURE	BLOW PATTERN	LOCATION	REMARKS	QUANTITY ^a	
CD-1	362 (830)	600x600 (24x24)	.075	4-WAY	ASSEMBLY HALL	MAX NC 25	9	
CD-2	359 (760)	600x600 (24x24)	.075	4-WAY	ASSEMBLY HALL	MAX NC 25	7	
CD-3	140 (300)	300x300 (12x12)	.075	4-WAY	CATERING KITCHEN	MAX NC 25	2	
CD-4	283 (600)	375x375 (15x15)	.075	4-WAY	SERVER ROOM	MAX NC 25	1	
CD-5	94 (200)	225x225 (9x9)	.075	4-WAY	WOMEN'S TOILET	MAX NC 25	2	
CD-6	94 (200)	225x225 (9x9)	.075	3-WAY	COUNSELING OFFICE	MAX NC 25	1	
CD-7	48 (100)	225x225 (9x9)	.075	3-WAY	JANITOR CLOSET	MAX NC 25	1	
CD-8	163 (330)	300x300 (12x12)	.075	4-WAY	FAMILY ASSISTANCE CENTER	MAX NC 25	2	
CD-9	151 (320)	300x300 (12x12)	.075	4-WAY	NURSING AREA	MAX NC 25	1	
CD-10	354 (750)	450x450 (18x18)	.075	4-WAY	WAITING AREA	MAX NC 25	1	
CD-11	177 (400)	300x300 (12x12)	.075	4-WAY	PASS AND ID	MAX NC 25	2	
CD-12	306 (650)	375x375 (15x15)	.075	4-WAY	LOBBY HALL	MAX NC 25	1	
CD-13	70 (150)	225x225 (9x9)	.075	2-WAY	AV SATELLITE ROOM	MAX NC 25	1	
CD-14	70 (150)	225x225 (9x9)	.075	2-WAY	AV SATELLITE ROOM	MAX NC 25	1	
CD-15	70 (150)	300x300 (12x12)	.075	2-WAY	CORRIDOR	MAX NC 25	2	
SR-1	94 (200)	300x200 (12x8)	.077	DOUBLE DEFLECTION	MECHANICAL ROOM	MAX NC 25	1	
SR-2	94 (200)	300x200 (12x8)	.077	DOUBLE DEFLECTION	ELECTRICAL ROOM	MAX NC 25	1	



NAVFAC



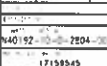
FAC Engineering Command



NAVFAC PROJECT 140040 JFHQ ADD/ALT PH IV



MECHANICAL EQUIPMENT SCHEDULE

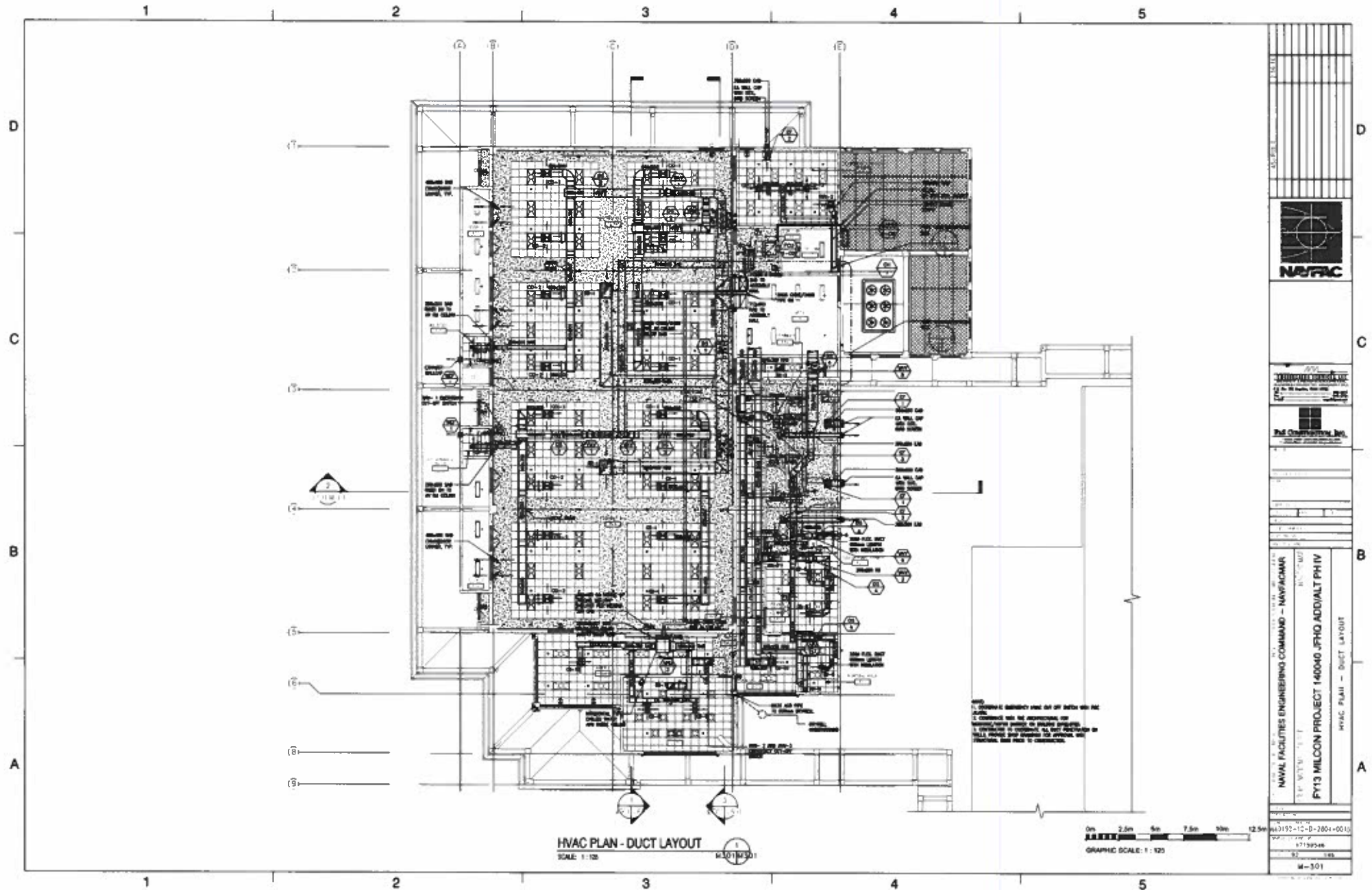


NAVFAC PROJECT 140040 JFHQ ADD/ALT PH IV



NAVFAC PROJECT 140040 JFHQ ADD/ALT PH IV

Attachment E BLD 350

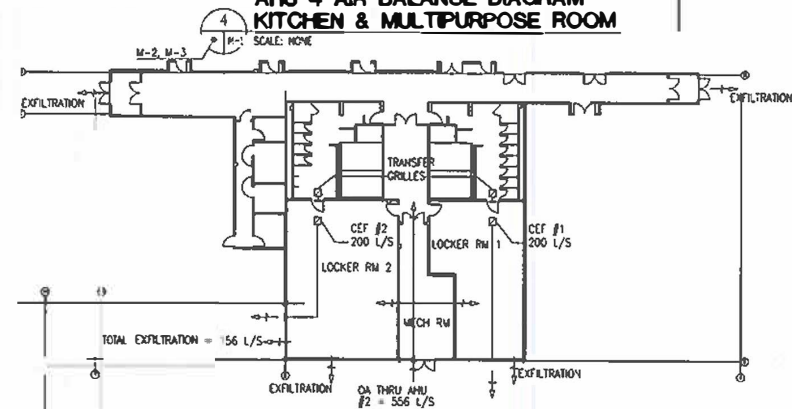


ABSTRACT

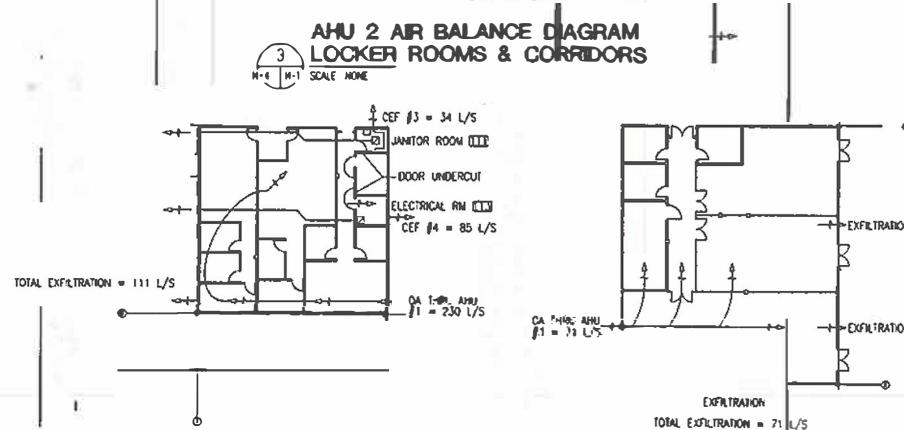
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Figure 10 is a schematic diagram of a kitchen exhaust system. It shows a kitchen area with a range hood connected to a duct system. The duct system includes a transfer grille (2.682 L/S) and a main exhaust duct (4.502 L/S). The system also shows a multi-purpose room (898 L/S) and a make-up air system (1.502 L/S). The duct system is labeled with "TRANSFER GRILLE, TYP." and "GA THRU ASU #4 = 3,500 L/S".

AHU 4 AIR BALANCE DIAGRAM KITCHEN & MULTIPURPOSE ROOM



AHU 2 AIR BALANCE DIAGRAM LOCKER ROOMS & CORRIDORS

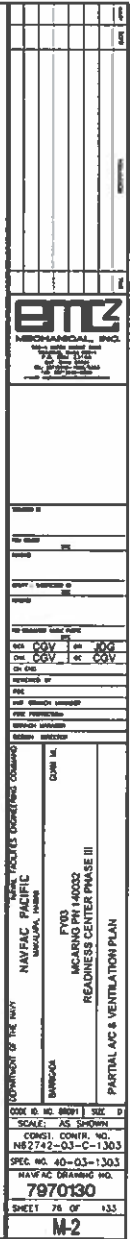


**AHU 1 AIR BALANCE
DIAGRAM - ADMIN OFFICE**



THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK AMONG THE VARIOUS PRICES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

BLD 400



PARTIAL A/C AND VENTILATION PLAN

NOTE: FOR EXACT LOCATION OF CEILING DIFFUSERS,
GRILLES AND REGISTERS, SEE ARCHITECTURAL DWG. A-3.

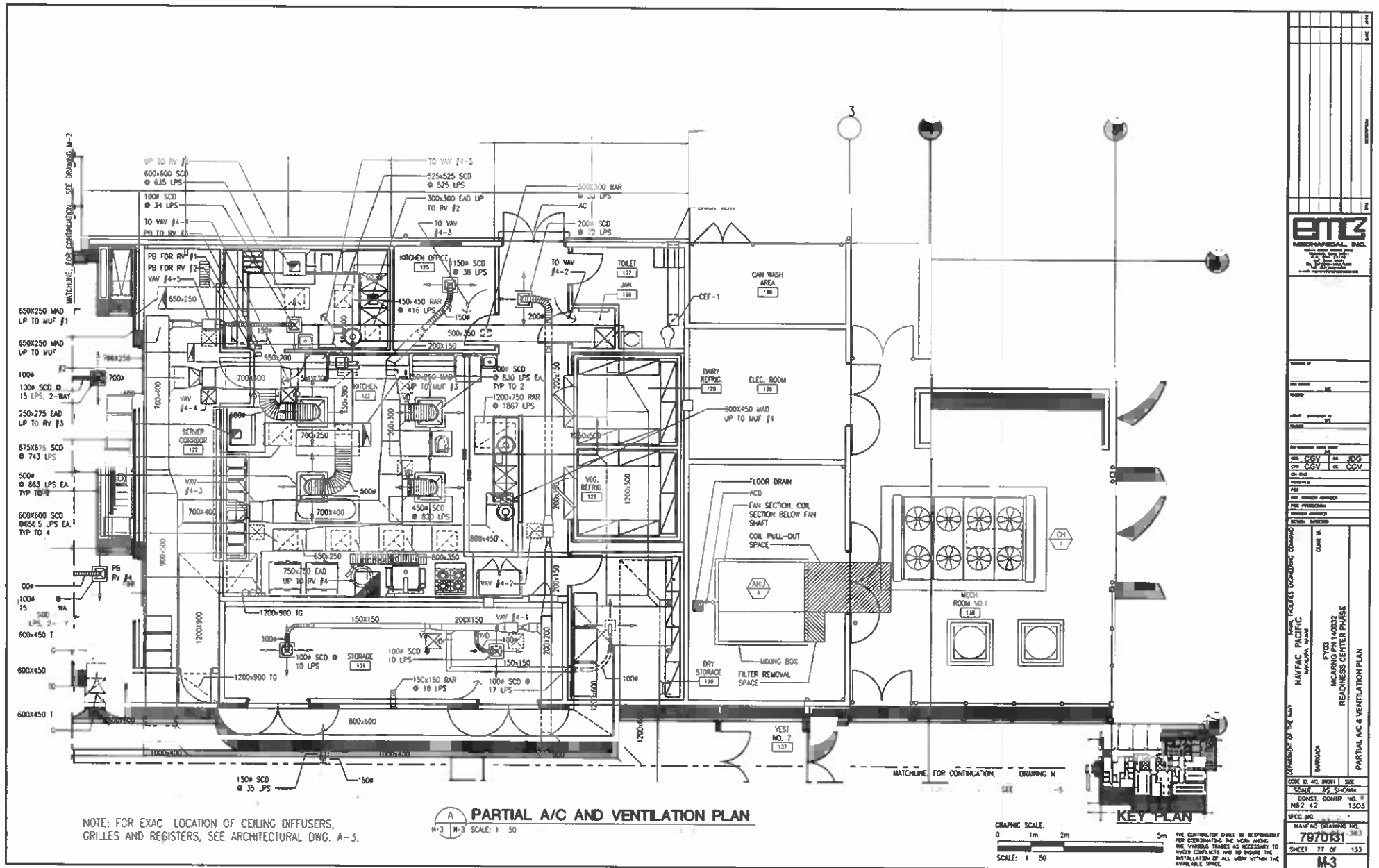


KEY PLAN

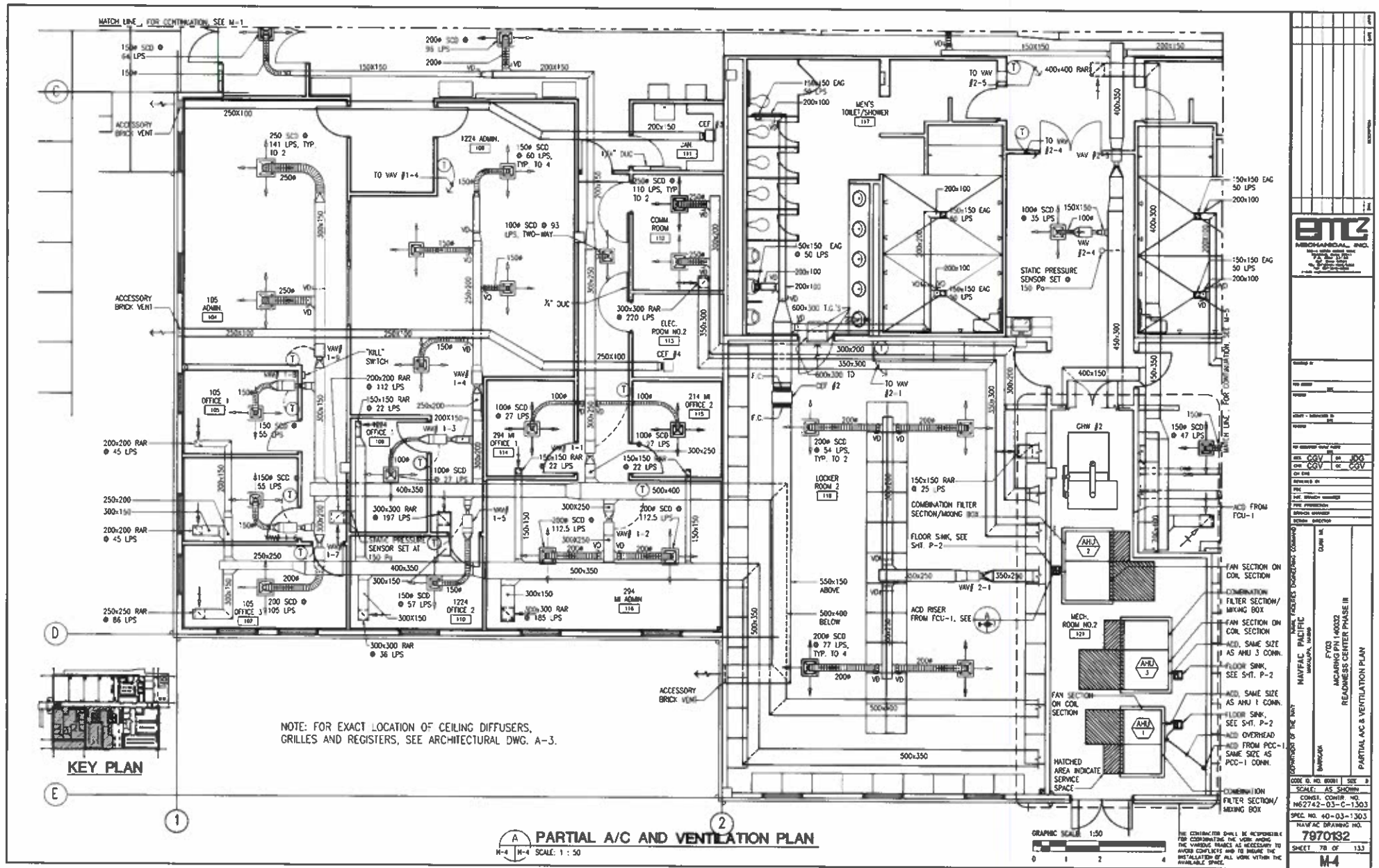


THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK AMONG THE VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

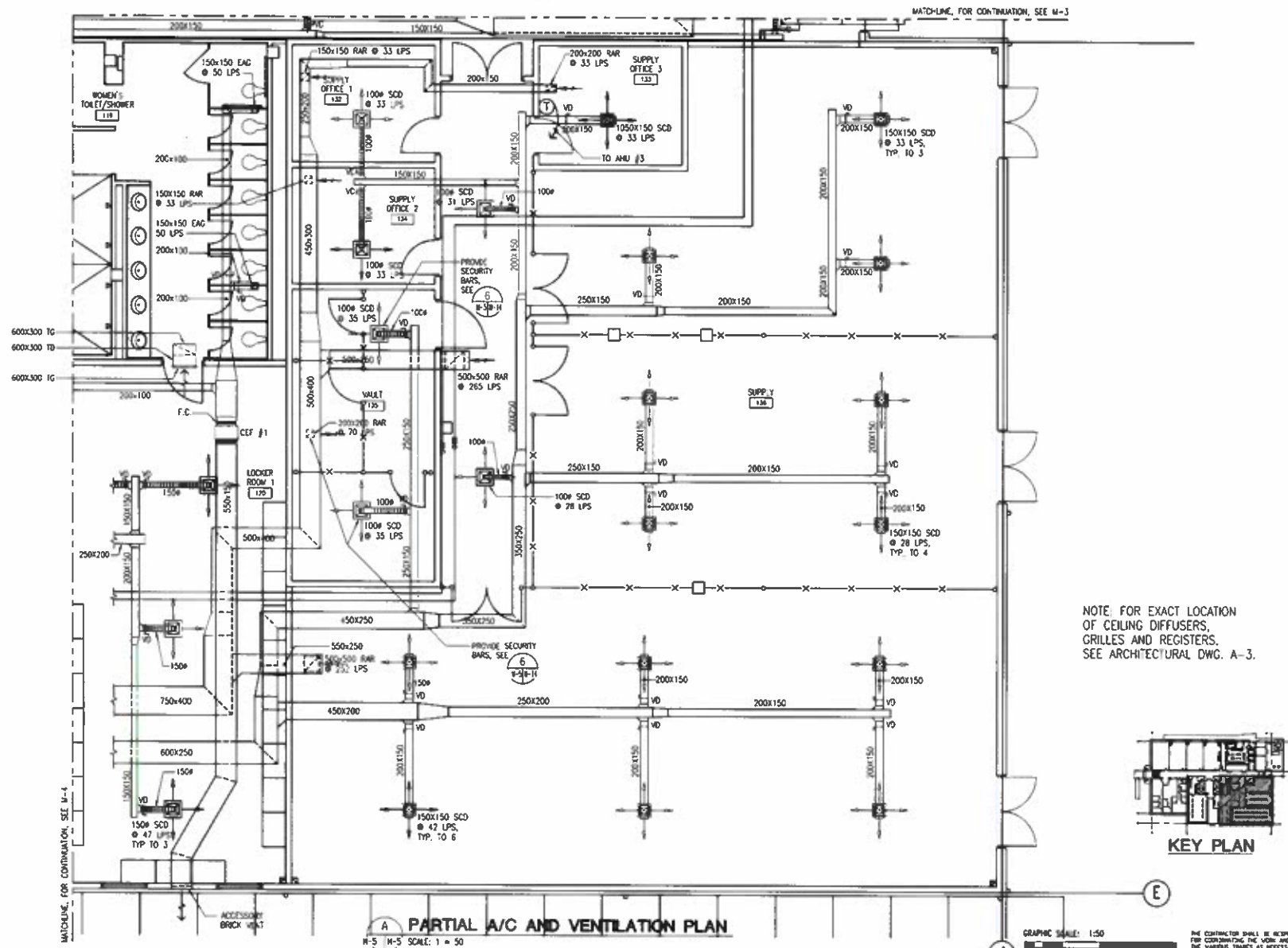
Attachment F BLD 400



Attachment F BLD 400

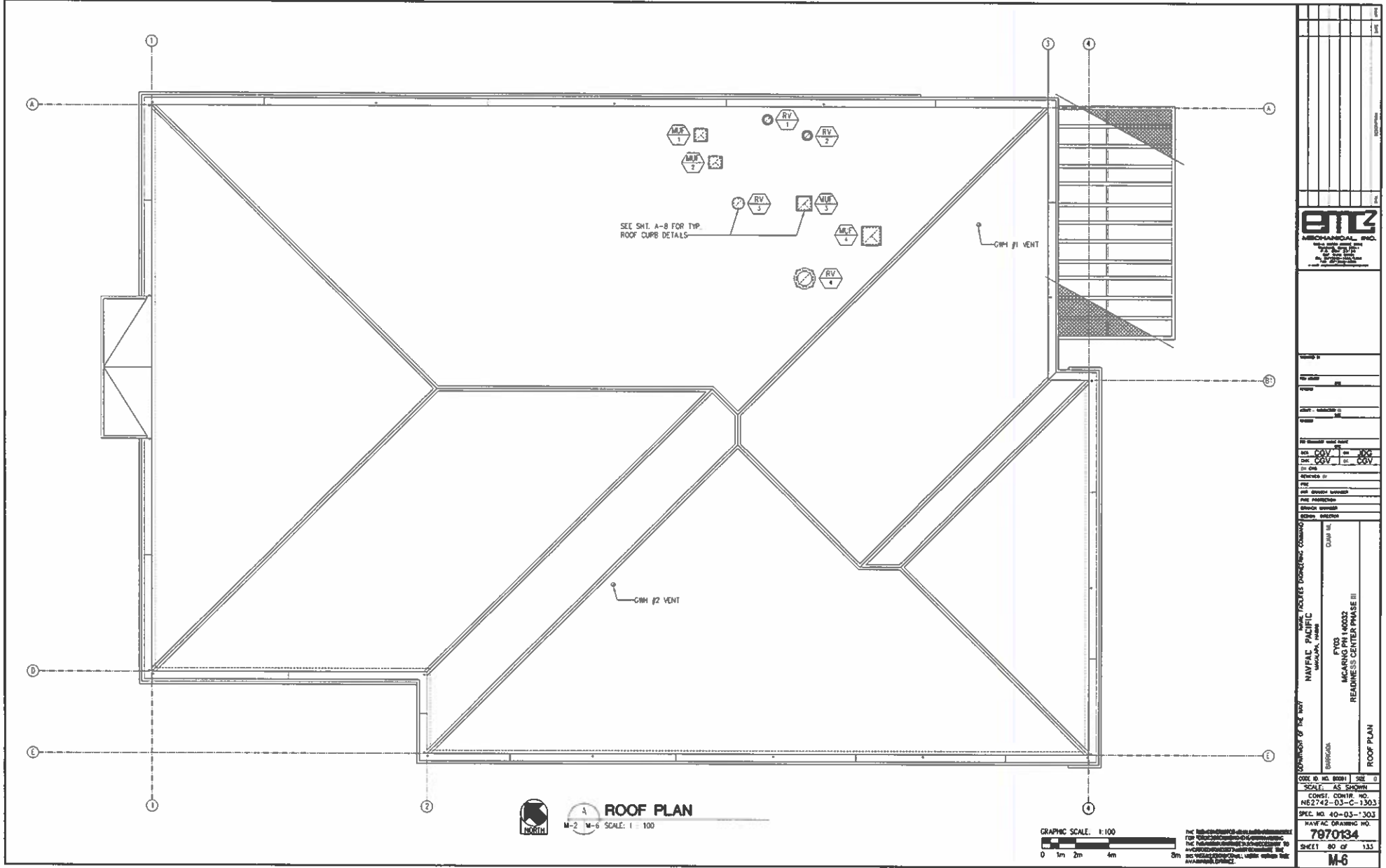


Attachment F
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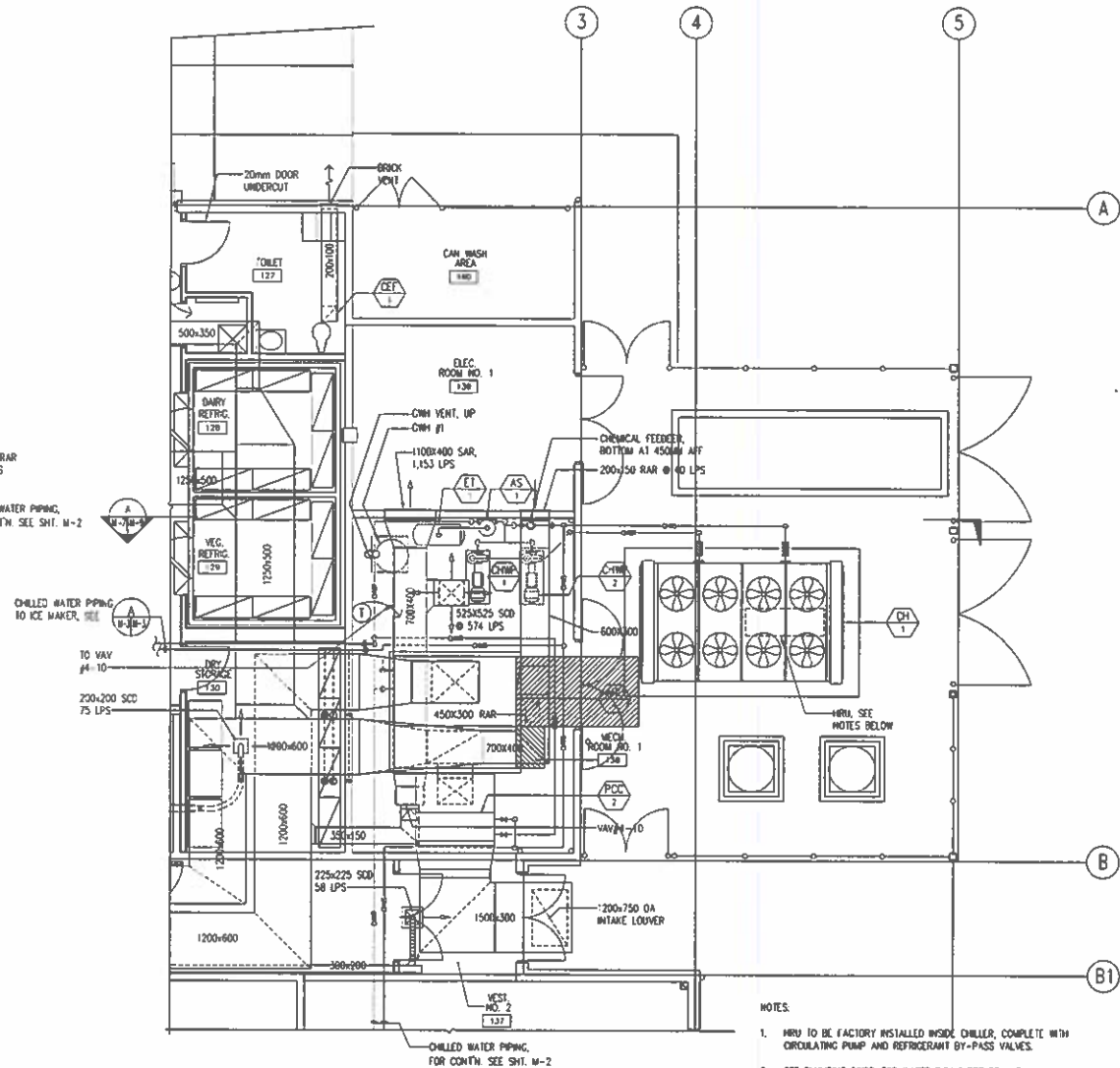
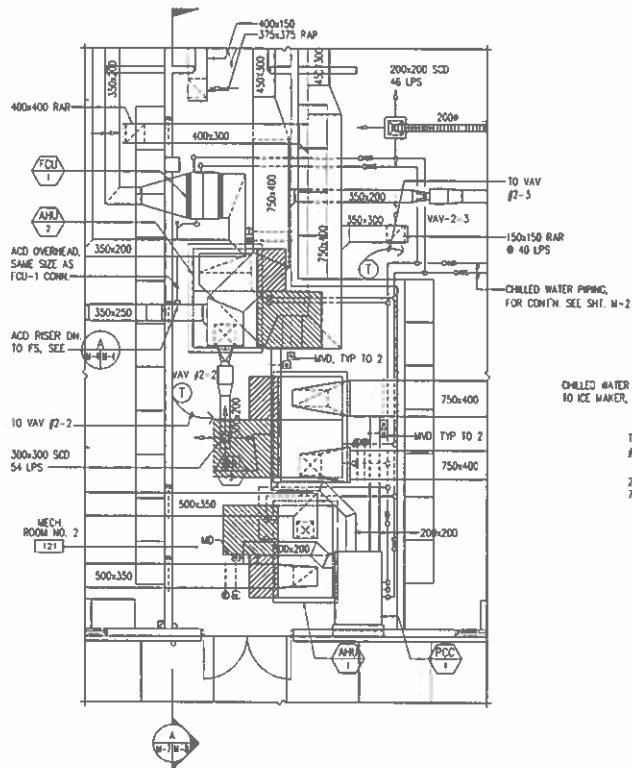


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Attachment F
BLD 400



Attachment F BLD 400



NOTES:

1. HRU TO BE FACTORY INSTALLED INSIDE CHILLER, COMPLETE WITH CIRCULATING PUMP AND REFRIGERANT BY-PASS VALVES.
2. SEE PLUMBING DWGS. FOR WATER PIPING BETWEEN HRU AND HOT WATER STORAGE TANKS.
3. CONDENSATE DRAIN PIPING SHALL BE SAME SIZE AS DRAIN PAN CONNECTION.

GRAPHIC SCALE: 1:50

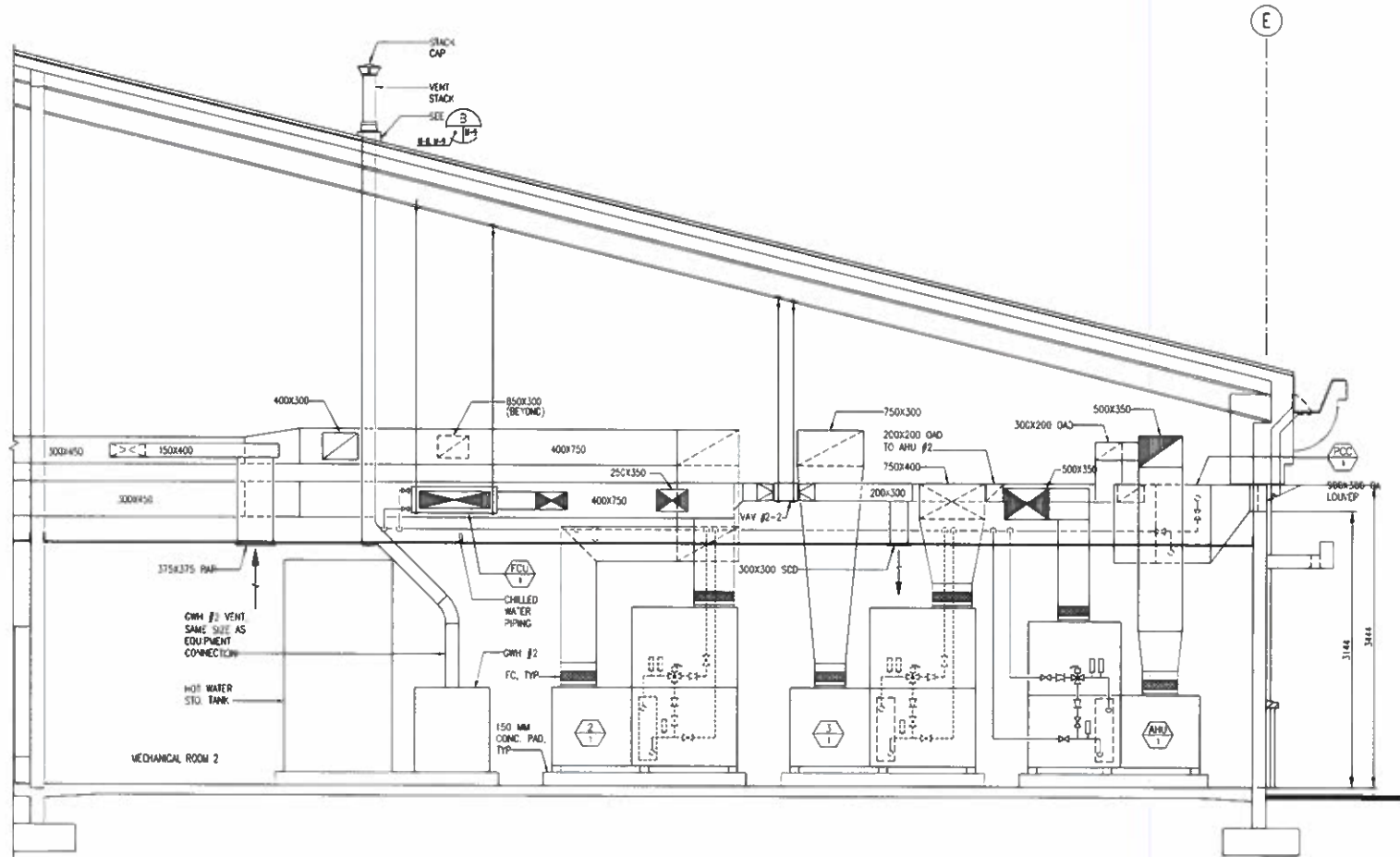


THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK WITH THE VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

ETC MECHANICAL, INC. 1000 S. 10th St. Suite 100 Lincoln, NE 68502 (402) 441-1111 FAX (402) 441-1112 E-MAIL: info@etcmech.com	
PROJECT NO. 140032 MECHANICAL ROOM 1 & 2 FLOOR PLAN	
DATE: 01/11/11 DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN APPROVED BY: J. B. BROWN	DATE: 01/11/11 DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN APPROVED BY: J. B. BROWN
NAVFAC PACIFIC 140032 MECHANICAL ROOM 1 & 2 FLOOR PLAN	
SHEET 01 OF 153 M-7	

Attachment F

BLD 400



SECTION
M-7 M-8 SCALE: 1:25

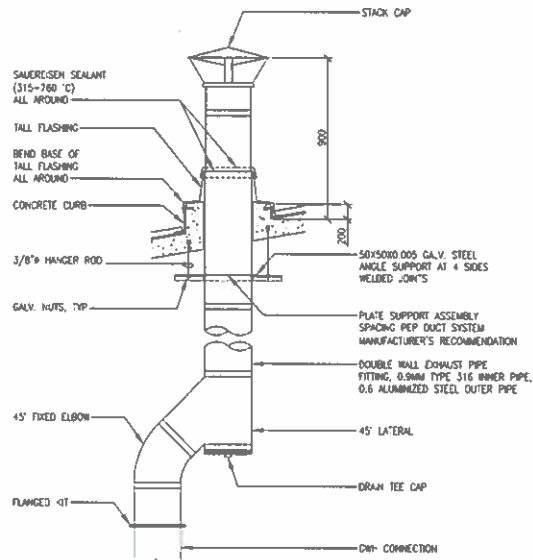
GRAPHIC SCALE: 1:25

0 0.5m 1m 2m

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING THE WORK AMONG THE VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

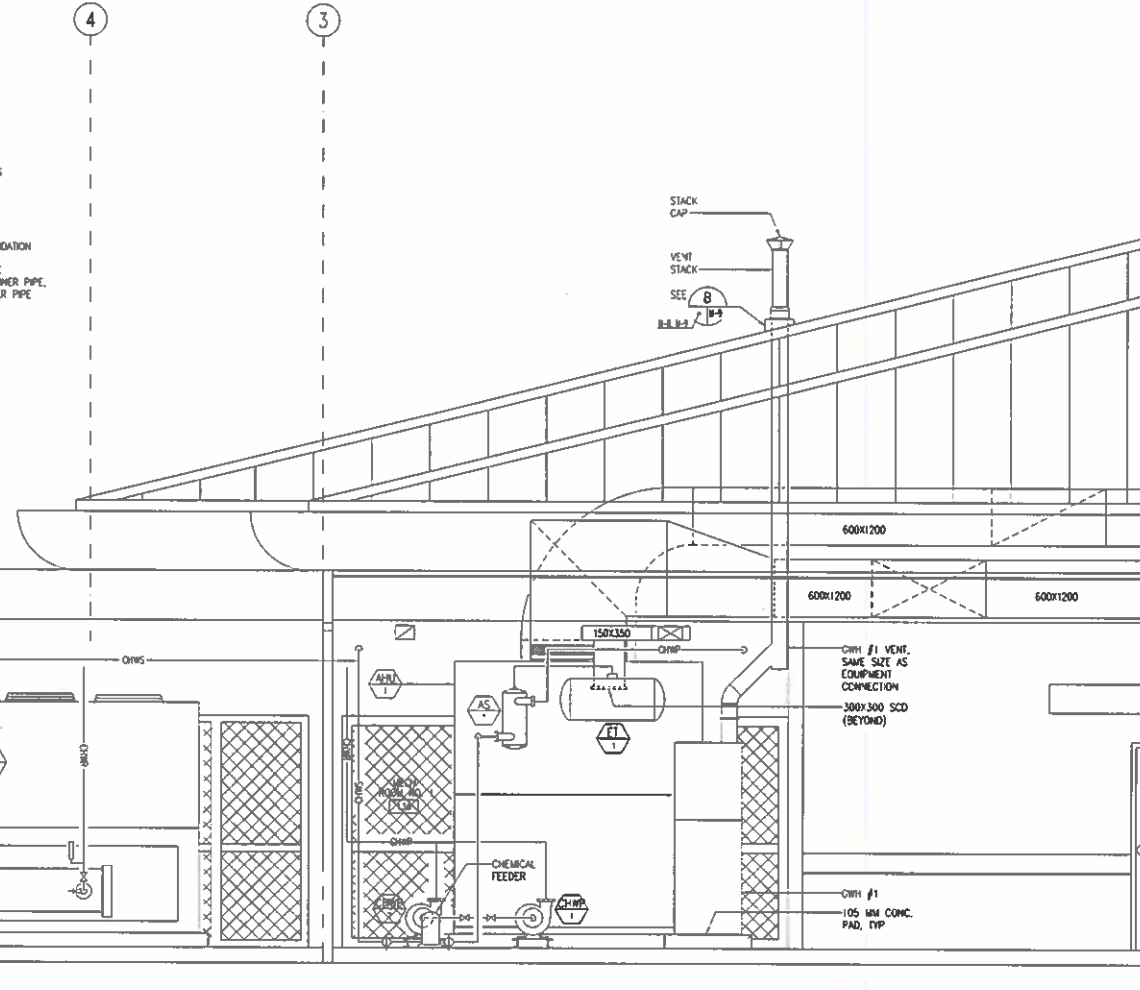
MECHANICAL MECHANICAL, INC. 1000 S. 10th St. Phoenix, AZ 85001 Tel: (602) 944-1100 Fax: (602) 944-1101	
PROJECT NO. 140032 PROJECT NAME: READINESS CENTER PHASE III DRAWING NO. 7970136 SHEET 03 OF 133 M-8	
DATE: 01/11/01 BY: J. L. BROWN CHECKED BY: J. L. BROWN APPROVED BY: J. L. BROWN TITLE: PROJECT MANAGER	DATE: 01/11/01 BY: J. L. BROWN CHECKED BY: J. L. BROWN APPROVED BY: J. L. BROWN TITLE: PROJECT MANAGER

Attachment F BLD 400



8 GWH VENT DETAIL

M-8, M-9 SCALE: NONE



A SECTION

M-7, M-9 SCALE: 1:25

GRAPHIC SCALE: 1:25

0 0.5m 1m 2m

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING THE VENT AND THE VARIOUS IMAGS AS NECESSARY TO AVOID CONFLICTS AND TO BRING THE INSTALLATION OF ALL VENTS WITHIN THE AVAILABLE SPACE.

ENTZ MECHANICAL, INC. 10000 15th Ave. S. Suite 100 Burien, WA 98148 Phone: (206) 835-1111 Fax: (206) 835-1112 Email: entz@entzmech.com	
Project Name: NAVFAC PACIFIC Project No: 7903 Project Title: MCARNO PH 140032 Project Phase: READINESS CENTER PHASE III	
Drawing Title: SECTION	
Drawing No: 7970137	
Sheet No: 133	
Scale: M-8	

Attachment F
BLD 400

EQUIPMENT SCHEDULE:

MARK	QTY.	CAPACITY KW	REFRIGERANT	COMP INPUT KW	EER	COOLER DATA					AIR TEMP ENT CONDENSER, °C	CONDENSER FANS	POWER SUPPLY CHARACTERISTICS	MANUFACTURER AND MODEL NO.	REMARKS
						L/S	ENT °C	INT °C	P.D. MPa	FOULING FACTOR					
CH-1	1	326.1	R-134A	117.3	10	14.6	11.1	5.55	6	0.0005	35	10 @ .746KW	208V, 3A, 60Hz	"CARRIER" QXR 118	INCLUDES HIRU W/ PHENOLIC COATING ON CONDENSER COILS

AIR HANDLING UNITS:

MARK	LOCATION	AREA SERVED	COOLING LOAD, KW		COL AIRFLOW, L/S	SUPPLY AIR L/S	OUTSIDE AIR L/S	AIR TEMPERATURE ENTERING COIL, °C		CHILLED WATER			COOLING COIL FINS/IN	FAN E.S.P. Pa	MIN/MAX MOTOR HP	POWER SUPPLY CHARACTERISTICS	MANUFACTURER & MODEL NO.	REMARKS
			TOTAL	SENSIBLE				DB	WB	L/S	ENT °C	LVC °C						
AHU #1	MECH RM #2	OFFICES	26.2	20.2	1,117	1,263	230	24.2	16.3	1.13	5.55	11.1	6	14	186	1.5	208V, 3A, 60Hz	"CARRIER" 39M06 VAV W/ VARIABLE FREQUENCY DRIVE
AHU #2	MECH RM #2	LOCKER ROOMS CORRIDORS, VESTIBULE	21.1	11.1	717	881	556	21.8	18.3	0.91	5.55	11.1	6	14	187	3/4	208V, 3A, 60Hz	"CARRIER" 39M03 VAV W/ VARIABLE FREQUENCY DRIVE
AHU #3	MECH RM #2	SUPPLY ROOM SUPPLY OFFICE	12.5	9.8	695	695	71	26.0	18.9	0.54	5.55	11.1	6	11	164	0.5	208V, 3A, 60Hz	"CARRIER" 39M03 CAV
AHU #4	MECH RM #1	MULTI-PURPOSE ROOM KITCHEN	175.3	102.6	6,105	7,789	3,580	22.7	17.8	7.55	5.55	11.1	6	11	152	10	208V, 3A, 60Hz	"CARRIER" 39M036 VAV W/ VARIABLE FREQUENCY DRIVE
FCU #1	MECH RM #2	COMM ROOM	2.7	2.7	220	220	0	25.6	8.4	0.12	5.55	11.1	4	8	100	1/4	115V, 1A, 60Hz	"CARRIER" 420C08

PRE-COOLING COILS:

MARK	LOCATION	AHU SERVED	COOLING LOAD, KW		OUTSIDE AIR L/S	AIR TEMPERATURE ENTERING COIL, °C		CHILLED WATER			COOLING COIL FINS/IN	MANUFACTURER & MODEL NO.	REMARKS
			TOTAL	SENSIBLE		DB	WB	L/S	ENT °C	LVC °C			
POC #1	MECH RM #2	AHU #1, #2, #3	20.4	8.6	857	30.0	26.1	1.05	5.55	11.1	6	14	CARRIER 39M14 COOLING COIL SECTION
POC #2	MECH RM #1	AHU #4	77.5	32	3,580	30.0	26.1	4.10	5.55	11.1	6	14	CARRIER 39M14 COOLING COIL SECTION

CHILLED WATER PUMPS:

MARK	CAPACITY L/S	RPM	T.D.H. M	WH EFFICIENCY, %	MOTOR HP	POWER SUPPLY CHARACTERISTICS	REMARKS
CHWP-1&2	14.6	1750	178	70	5	208V, 3A, 60Hz	

EXHAUST FANS:

MARK	AREA SERVED	CAPACITY L/S	STATIC PRESSURE Pa	SONES	TYPE	MOTOR WATAGE	POWER SUPPLY CHARACTERISTICS	MANUFACTURER & MODEL NO.	REMARKS
CEF #1	WOMEN'S RESTROOM & SHOWER	200	62.5	4.3	IN-LINE CENTRIFUGAL	152 W	115V, 1A, 60Hz	PENN ZYPWR MODEL 21015 (TDA)	ALL CEILING FANS TO HAVE ACCESSORY EXTENDED ALUMINUM BRICK VENTS, INSECT SCREENS, SPEED CONTROLLERS AND ARE LIGHT SWITCH CONTROLLED
CEF #2	MEN'S RESTROOM & SHOWER	200	62.5	4.3	IN-LINE CENTRIFUGAL	152 W	115V, 1A, 60Hz	PENN ZYPWR MODEL 21015 (TDA)	
CEF #3	JANITOR ROOM	34	62.5	2.8	CEILING FAN W/ INTERNAL ORILLE	79 W	115V, 1A, 60Hz	PENN MODEL 25H	
CEF #4	CLOSET ELECTRICAL ROOM	85	62.5	1.8	CEILING FAN W/ INTERNAL ORILLE	77 W	115V, 1A, 60Hz	PENN MODEL 28S	
CEF #5	TOILET 127	24	27.5	1.4	CEILING FAN W/ INTERNAL ORILLE	39 W	115V, 1A, 60Hz	PENN ZYPWR MO. 25H	ALL ROOF VENTILATORS TO HAVE NEMA DISCONNECT SWITCHES, MAGNETIC STARTER WITH AUXILIARY CONTACTS AND START-STOP PUSH-BUTTON SWITCHES
RV #1	DISHWASHER 30	566	125	7.7	ROOF-VENTILATOR	186 W	115V, 1A, 60Hz	GREENHECK CB 41-	
RV #2	GEN EXHAUST 36	472	63	12.7	ROOF VENTILATOR	106 W	115V, 1A, 60Hz	GREENHECK CB 121 4	
RV #3	GREASE HOOD 21	637	187	15.8	ROOF VENTILATOR UPBLAST TYPE	249 W	115V, 1A, 60Hz	GREENHECK CUBE 141 3	
RV #4	KITCHEN HOOD 50	2,822	187	24	ROOF VENTILATOR UPBLAST TYPE	1,119 W	115V, 1A, 60Hz	GREENHECK CUBE 300-15	

MAKE-UP FANS:

MARK	AREA SERVED	CAPACITY L/S	STATIC PRESSURE Pa	TYPE	MOTOR	POWER SUPPLY CHARACTERISTICS	MANUFACTURER & MODEL NO.	REMARKS
MUF #1	KITCHEN	246	63	ROOF MOUNTED	1/4 HP	115V, 1A, 60Hz	"GREENHECK" MODEL RSPF-90-6	ALL MAKE-UP FANS TO HAVE 50 MM WASHABLE FILTER, NEMA 1 DISCONNECT SWITCHES AND MAGNETIC STARTERS, INTERLOCK WITH RESPECTIVE RV
MUF #2	KITCHEN	189	63	ROOF MOUNTED	1/4 HP	115V, 1A, 60Hz	"GREENHECK" MODEL RSPF-90-6	
MUF #3	KITCHEN	255	63	ROOF MOUNTED	1/4 HP	115V, 1A, 60Hz	"GREENHECK" MODEL RSPF-90-6	
MUF #4	KITCHEN	1,130	125	ROOF MOUNTED	3/4 HP	115V, 1A, 60Hz	"GREENHECK" MODEL RSPF-100-7	

AIR CURTAIN:

MARK	AREA SERVED	CAPACITY, L/S	NOZZLE VELOCITY, M/S	MOTOR HP	POWER SUPPLY CHARACTERISTICS	MANUFACTURER & MODEL NO.	REMARKS
AC	KITCHEN	3,256	6.6	3	208V, 1A, 60Hz	KING K MO. K1-6-300/208	PROVIDE MANUAL STARTER

AIR SEPARATOR

MARK	DESCRIPTION	CAPACITY	REMARKS
AS-1	AIR SEPARATOR	12.2	

EXPANSION TANK

MARK	DESCRIPTION	CAPACITY	REMARKS
ET-1	EXPANSION TANK	300 LITERS	

VARIABLE AIR VOLUME BOXES (VAV):

MARK	MAX PRESSURE DROP, Pa	NOMINAL CAPACITY LPS	MIN AIR FLOW, LPS	INLET SIZE MM (DN)	POWER SUPPLY CHARACTERISTICS	MANUFACTURER & MODEL NO.
#1-1	24.9	255	69	200	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-2	24.9	225	37	150	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-3	24.9	27	6	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-4	24.9	237	30	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-5	24.9	57	15	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-6	24.9	55	14	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-7	24.9	105	30	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-8	24.9	35	14	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#1-9	24.9	282	46	200	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#2-1	24.9	227	65	200	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#2-2	24.9	308	16	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#2-3	24.9	189	54	150	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#2-4	24.9	23	7	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#2-5	24.9	140	30	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-1	24.9	37	17	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-2	24.9	72	365	400	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-3	24.9	1698	387	400	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-4	24.9	1726	369	400	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-5	24.9	38	246	300	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-6	24.9	602	189	300	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-7	24.9	568	180	300	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-8	24.9	568	180	300	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-9	24.9	682	216	300	115V, 1A, 60Hz	"CARRIER" 35EC SERIES
#4-10	24.9	1727	23	125	115V, 1A, 60Hz	"CARRIER" 35EC SERIES

NOTE: PROVIDE VAV BOXES WITH 115V/24V INTEGRAL CONTROL TRANSFORMER.

HEAT RECOVERY UNIT:

MARK	NO. OF CIRCUITS	SYSTEM RATING, KW	PUMP CAPACITY	REMARKS
HRU	2	281 (140.5 kW/DKT)	0.88 LPS @ 3 METERS HEAD	FACORY INSTALLED INSIDE CHILLER ENCLOSURE WITH INTEGRAL CIRCULATING PUMP

CONTRACTOR SHALL BE RESPONSIBLE
FOR COORDINATING THE WORK AND
OBTAINING ALL NECESSARY PERMITS
AND COMPLIANCE WITH ALL LOCAL
REGULATIONS OF ALL WORK WITHIN THE
PROJECT SPEC.

DATE	10/10/2019
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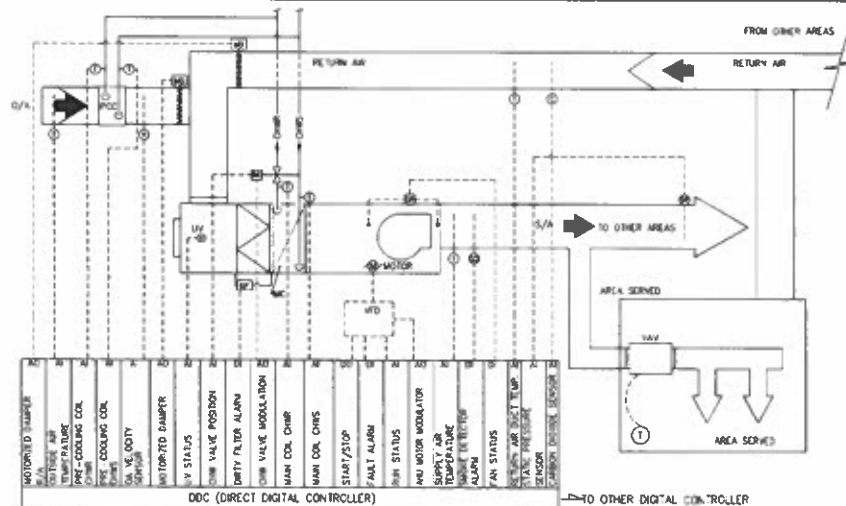
88. 10/10/2019

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90. 10

Attachment F

BLD 400



VAV CONTROL/MONITOR SYSTEM DIAGRAM
TYPICAL TO AHU-1, 2 & 4

SEQUENCE OF OPERATION:

- [illegible]

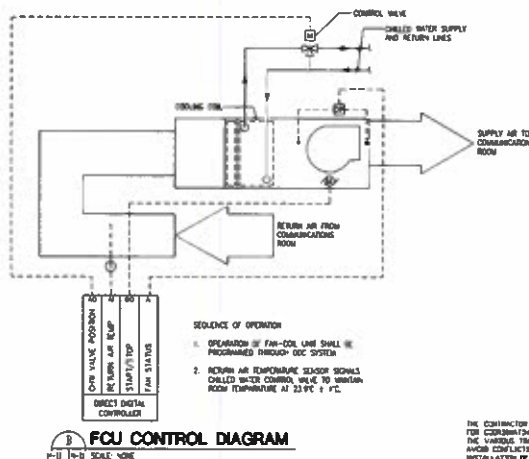
NOTE: SEQUENCE OF OPERATION FOR AHU #3 IS SIMILAR (EXCEPT:

1. SPACE TEMPERATURE SENSOR SIGNALS 3-WAY CONTROL VALVE THROUGH T-LOC SYSTEM TO MAINT SPACE TEMPERATURE AT 26.0°C/79°F.

LEGEND & SYMBOLS

- | | |
|------|------------------------------|
| A | ANALOG INPUT |
| AB | CHILLED OUTPUT |
| CHL | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| DC | DIGITAL CONTROL |
| DI | DIGITAL INPUT |
| DO | DIGITAL OUTPUT |
| DP | DIFFERENTIAL PRESSURE SENSOR |
| E | EXHAUST FAN |
| GRV | GAS WATER HEATER |
| MW | MIX VALVE |
| O/A | OUTSIDE AIR |
| P/C | FIRE-COOLING COIL |
| PC | PRODUCT INTEGRATED CONTROL |
| R/B | RETURN AIR |
| S/H | SUPPLY AIR |
| V/F | VAV DIFFUSER |
| VF2 | VARIABLE FREQUENCY DRIVE |
| C | CARBON DIOXIDE SENSOR |
| H | HUMIDITY STATISTICS |
| M | MOTION DETECTOR |
| M2 | MOTIONLESS DAMPER |
| M3 | MOTIONLESS VAV |
| RAI | ROOM AIR |
| SE | SMOKE EXTRACTOR |
| STC | STAT MICROLOGIC SYSTEM |
| T | TEMPERATURE SENSOR |
| V | VOLUME SENSOR |

INPUT / OUTPUT SCHEDULE										
EQUIPMENT	POINT OF DESCRIPTION	ANALOG			DIGITAL		ALARMS			DEVICE
		IN	OUT	VALUE	IN	OUT	STATUS	HIGH	LOW	
CHILLER A	RUN STATUS			X						MC
CHILLED WATER PUMPS	CHILLER START/STOP					X				MC
	ALARM STATE					X	X			MC
	CHILLED WATER PUMP #1				X	X				MC
	CHILLED WATER PUMP #2				X	X				MC
	CHWP Suction	X	X							BC
	CHWP DISCHARGE	X	X							BC
	CHILLED WATER FLOW	X	X				X			MC
	ENTERING CHILLED WATER	X					X	X		MC
	LEAVING CHILLED WATER	X					X	X		MC
	RTU-HP	X	X							MC
	MSU PUMP STATUS	X			X					MC
	CIRCUIT A CAPACITY				X					MC
	CIRCUIT A Suction PRESSURE	X					X			MC
	CIRCUIT A DISCHARGE PRESSURE	X						X		MC
	CIRCUIT A Suction TEMP		X							MC
	CIRCUIT A OIL PRESSURE	X	X				X			MC
	CIRCUIT A COMP 1 STATUS				X		X			MC
	CIRCUIT A COMP 2 STATUS				X		X			MC
	CIRCUIT A CAPACITY				X					MC
	CIRCUIT B Suction PRESSURE	X					X			MC
	CIRCUIT B DISCHARGE PRESSURE	X						X		MC
	CIRCUIT B Suction TEMP		X							MC
	CIRCUIT B OIL PRESSURE	X	X				X			MC
	CIRCUIT B COMP 1 STATUS				X		X			MC
	CIRCUIT B COMP 2 STATUS				X		X			MC
CONNECT TO INHERIT TAGS	FAI STATUS			X		X				DC
FDR #1	RA TEMP / FAI STATUS/ON-OFF	X	X		X					BC
HRCP #1	PUMP STATUS/ON-OFF				X	X				BC
HRCP #2	PUMP STATUS/ON-OFF				X	X				BC
OWP #1	HOT WATER TEMPERATURE	X	X							DC
OWP #2	HOT WATER TEMP	X	X							DC



DDC POINTS LIST

[illegible]

FIELD DEVICES/AMU:

UNIT NO.	DESCRIPTION	QTY.	REMARKS
1	DIFFERENTIAL PRESSURE SWITCH	2	
2	TEMPERATURE SENSOR	2	
3	ROOM TEMPERATURE SENSOR		ONE PER VAV
4	CONTROL RELAY	3	
5	MOTORIZED DAMPER CONTROL	2	
6	THREE (3) WAY CONTROL VALVE	1	

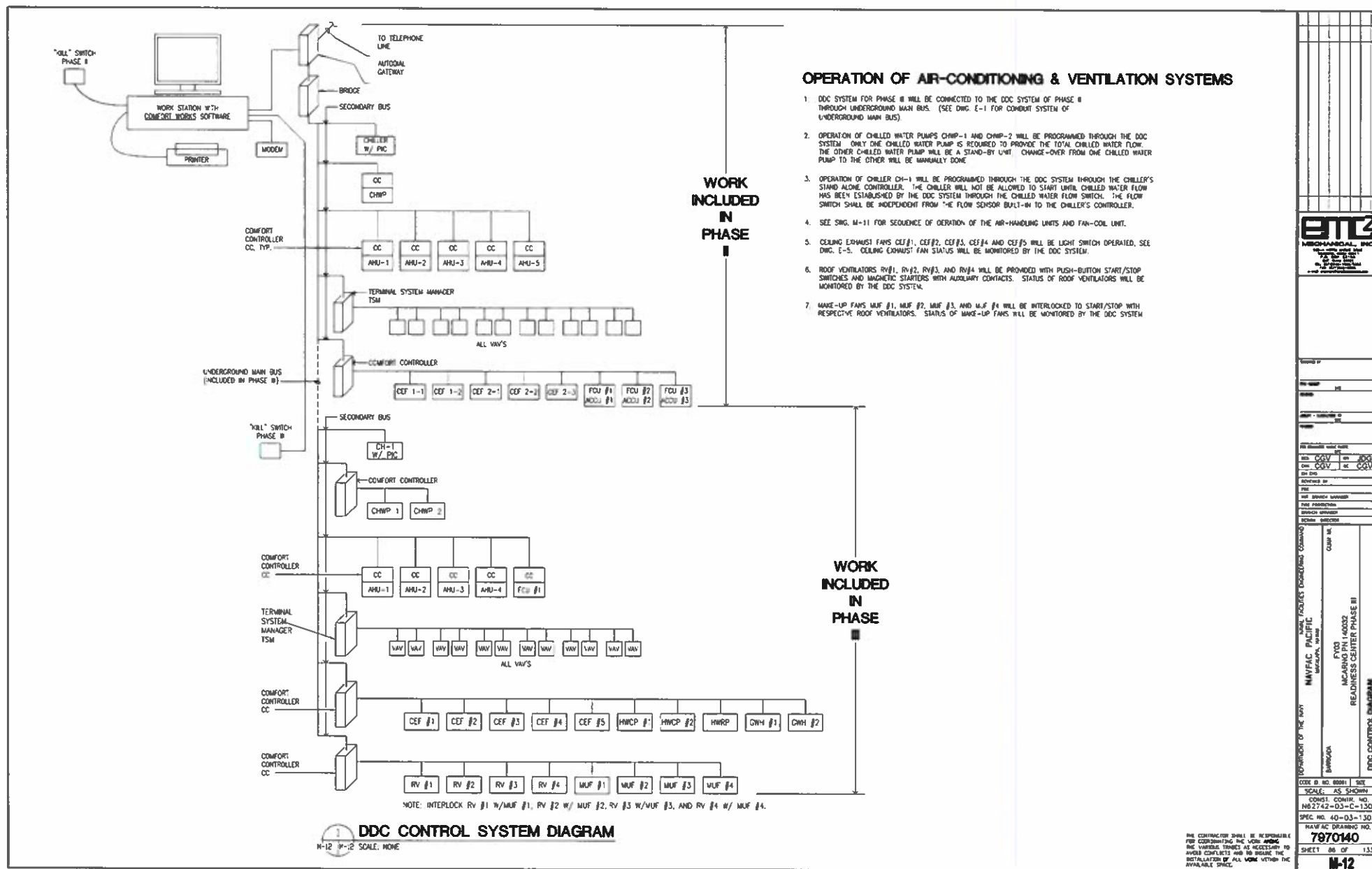
DDC CONTROLLER:

UNIT NO.	DESCRIPTION	QTY.	REMARKS
1	DDC MODULE	1	

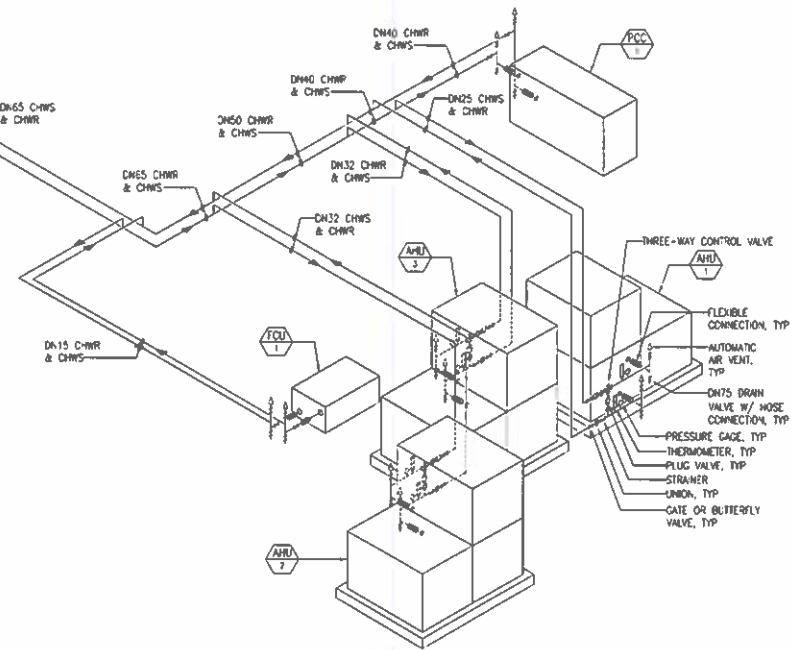
THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK AMONG THE VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

Attachment F

BLD 400



BLD 400



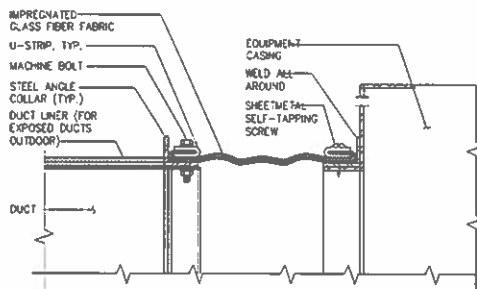
**CHILLED WATER ISOMETRIC PIPING
(MECH. ROOM NO. 1)**

M-7 M-13 SCALE: NONE



BRANCH CONNECTION DETAIL

M-2 TO M-5 M-13 SCALE: NTS

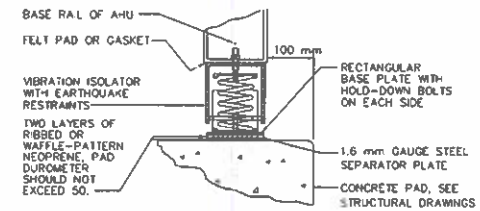


FLEXIBLE DUCT CONNECTION

M=7 M=13 SCALE: HTS



M-7 M-13 SCALE: NONE



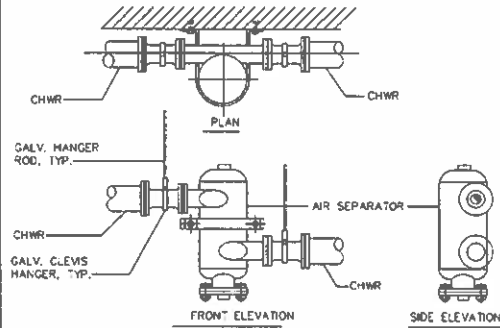
TYPICAL AHU VIBRATION ISOLATOR DETAIL

M-7 M-13 SCALE: N°S

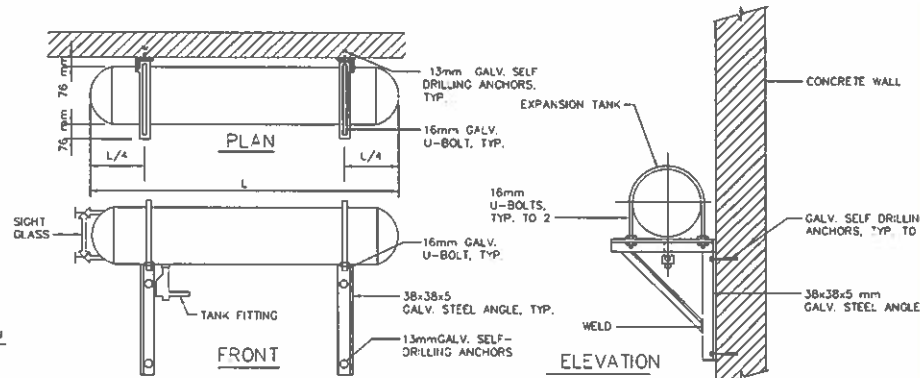
THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK AMONG THE VARIOUS PHASES AS NECESSARY TO AVOID CONFLICTS AND TO INSURE THE INSTALLATION OF ALL WORK WITHIN THE AVAILABLE SPACE.

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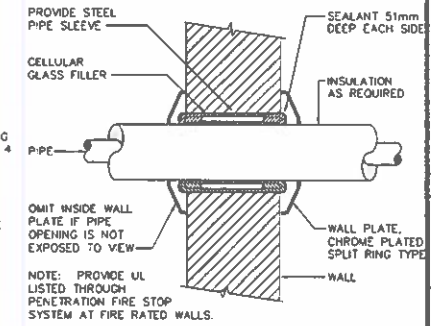
Attachment F BLD 400



1 AIR SEPARATOR TANK MTG. DETAIL
M-7 M-14 SCALE: NTS

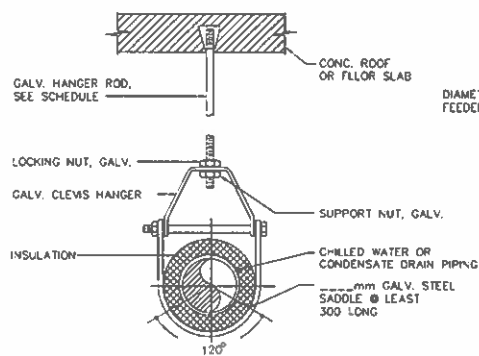


2 EXPANSION TANK MTG. DETAIL
M-7 M-14 SCALE: NTS

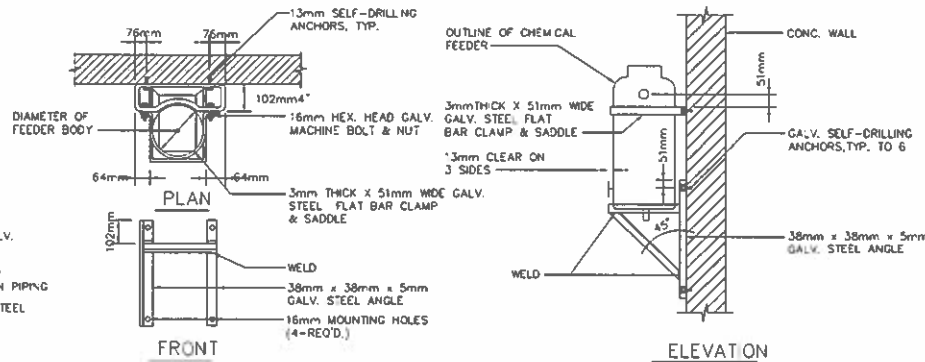


3 CHILLED WATER PIPE THRU WALL DETAIL
M-2 TO M-7 M-14 SCALE: NTS

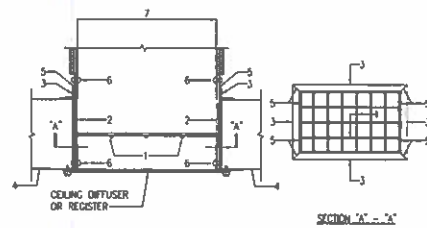
HANGER ROD SCHEDULE			
PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 51mm	10mm Ø	102mm TO 127mm Ø	16mm Ø
64mm "O" 76mm	13mm		



4 CLEVIS PIPE HANGER DETAIL
M-7 M-14 SCALE: NTS



5 CHEMICAL FEEDER MTG. DETAIL
M-7 M-14 SCALE: NTS



- LEGEND:**
1. 9.5 mm Ø TOOL RESISTANT STEEL BARS, AT 100 O.C., WELD AT ALL INTERSECTIONS
 2. SLEEVE, 50mm ONLY STEEL
 3. FIELD INSTALLED MOUNTING FLANGE (ALL SIDES)
 4. CONCRETE ROOF
 5. STITCH WELD FLANGE ANGLE TO SLEEVE (25 WELDS, MAX. 203 mm O.C., WELD FLANGE TO FLANGE JOINTS AT 4 CORNERS)
 6. CONNECT DUCT TO SLEEVE WITH RIVETS (152 mm O.C., MINIMUM 1 PER SIDE)
 7. DUCT AS SHOWN ON PLANS

6 SECURITY BAR WALL DETAIL
M-5 M-14 SCALE: NTS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE VENTING OF THE VARIOUS TRUNKS AS NECESSARY TO AVOID CONFLICTS AND TO SECURE THE INSTALLATION BY ALL VENT VENTHIN THE AVAILABLE SPACE.

REVISIONS	
NO.	DATE
1	10/1/00
PROJECT: MAYFAC PACIFIC	
DRAWING NO. 140032	
SHEET 14 OF 133	
M-14	

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